

**THE  
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

Railway Engineer • TRANSPORT • The Railway Netw  
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.  
RAILWAYS • ILLUSTRATED ESTABLISHED 1835 • RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY

AT

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (12 lines)

Annual subscription payable in advance and postage free

British Isles and Abroad ..... £2 5s. 0d.

Single Copies ..... One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 85 No. 12

FRIDAY, SEPTEMBER 20, 1946

## CONTENTS

	PAGE
Editorial Notes .....	313
L.N.E.R. Handbook of Statistics .....	315
Transportation—Principles and Problems .....	315
Railway Charges .....	316
Indian Railways in 1944-45 .....	316
Letters to the Editor .....	318
The Scrap Heap .....	319
Overseas Railway Affairs—South Africa, India, New Zealand, Western Australia, United States, Denmark, France .....	320
Additional 4-8-2 Class "15F" Locomotives for the South African Railways .....	321
Maintenance and Overhaul of Signalling Relays .....	327
The Greatest Bridge in Holland Temporarily Reconstructed .....	329
Personal .....	331
News Articles .....	333
Notes and News .....	338
Official Notices .....	339
Stock Market and Table .....	340

Now Ready

Price 25s.

**HISTORY  
OF THE  
BRITISH RAILWAYS  
DURING THE WAR  
1939-45**

by R. BELL, C.B.E.

with a foreword by Sir William Wood,  
President, London Midland & Scottish Railway

**THE RAILWAY GAZETTE**  
33, TOTHILL STREET, WESTMINSTER, S.W.1

## Anglo-Argentine Agreement Reached

REPORTS from Buenos Aires indicate that in the last two days before the British Mission was due to leave Argentina, agreement was reached with the authorities, and what had seemed to be an inevitable deadlock was averted. On September 15 both the Argentine authorities and Sir Wilfrid Eady, head of the British Mission, announced that complete agreement had been reached. Towards the end of last week it became known that Sir Montague Eddy, who, with Mr. B. H. Binder, has accompanied the official Government Mission as a representative of the British-owned Argentine railways, had been in conversation with members of the Argentine administration. As we were closing for press, full details of the agreement were issued. A new Argentine company is to take over the operating assets of the British-owned railways. The latter will hold the initial capital, which will be guaranteed an annual income of 80,000,000 pesos (approximately £5,000,000). If net income does not reach 4 per cent. Argentina will take steps to permit the company to earn 4 per cent. If net income exceeds 6 per cent. of the issued capital, the excess will be used for amortisation or redemption of capital, or for extension of the railways. The Argentine Government is to provide over five years 500,000,000 pesos in cash, to modernise the railway system. Conditional on the approval of the shareholders of the British companies and also of the Argentine Government, the transfer will be deemed to take effect as from July 1 last. Further details of the agreement will be given in our next week's issue.

## N.U.R. and the Closed Shop

In our September 6 issue we discussed compulsory membership of one trade union as it affected certain members of the staff of the London Passenger Transport Board. We then pointed out that the three large railway trade unions each have negotiating machinery with the railway companies, and compete with each other for members in the same grades of staff, and there are something like 30 to 40 unions which cater for railway workshop staff. In a recent issue of the *Railway Review*, the organ of the National Union of Railwaymen, the matter of the closed shop is dealt with at some length, and the current application to the railway companies that trade union membership should be a condition of employment in the railway service is recalled. Moreover, the policy of the N.U.R. is restated as "one union for all railwaymen." It is suggested that with the passing of railways to public ownership, there should be amalgamation of the three railway unions. The Associated Society of Locomotive Engineers and Firemen and the Railway Clerks' Association are invited by the General Secretary of the N.U.R. to give this matter deep consideration. This suggestion has been made several times in the past, but so far without any very marked response by the two unions which cater for specialised branches of railway employees.

## International Union of Railways' Statistics

In our August 30 issue we recorded the resumption of publication of the bulletin of the International Union of Railways, and a meeting of the General Assembly in Paris. The first post-war meeting of the International Union of Railways Committee to be held in London took place during the week August 26-31 at the offices in Grosvenor Gardens of the Continental Traffic Managers' Committee, which is the official liaison between the British railways and the International Union. The Statistical Sub-Committee of the Accounts & Exchange Committee of the International Union was then considering the possibility of resuming the *Statistical Bulletin* of the International Union of Railways which was the most comprehensive document of its kind, containing financial, traffic, operating, and technical data in respect of the whole of the European railways. The difficulties in the way of immediate resumption of the statistics on a post-war scale were freely discussed, and as a result, the sub-committee was able to present to the Accounts Committee of the International Union, at its meeting in Brussels on September 3, a complete picture as to how far the statistics could be resumed for publication. It is expected that a commencement can be made in the very near future, and the resultant documentation should be invaluable to all interested in railway transport. Members of the Statistical Sub-Committee were the

guests at an informal luncheon at the Charing Cross Hotel on August 27, when Mr. G. Morton, Chief Accountant, L.M.S.R., and Chairman of the Railway Statistics Committee, presided.

\* \* \* \*

#### American Railway's Commercial Survey

The Illinois Central Railroad recently undertook a commercial survey of South America to obtain information of the kind and volume of trade that could reasonably be expected to develop between the Middle West and the Mississippi Valley served by the railway and South America, and to acquaint South America with the products and potentialities of the Mississippi Valley, the Middle West, and the Port of New Orleans. The survey was carried out by Mr. Philip A. Webb, Jnr., General Traffic Agent, and Mr. J. M. Giral, General Agent. During their visit they met a large number of industrialists, representing almost every phase of enterprise, organisations such as chambers of commerce, state and city executives, representatives of banks, foreign traders and so forth, and found a wide interest in the prospects for an increased trade with the United States. The opportunity was taken to develop a good deal of publicity designed to promote trade between South America and the United States. In the report drafted on their return it was stressed that the best means which the railway could adopt to promote traffic would include persuading manufacturers that to develop South American markets they must allocate adequate materials for export, keep a careful watch on competition from other countries and take steps to meet it promptly.

\* \* \* \*

#### Transport Literature

Elsewhere in this issue, we review a monumental work by Professor Truman C. Bigham of Florida University, entitled "Transportation: Principles and Problems." This is the latest of several American studies in transport economics which have appeared since 1939. So far as we are aware, no literature of the same class has been produced in this country during recent years. Across the Atlantic, the war apparently has stimulated thought on transport subjects. Here the study of similar questions along economic lines may have been pursued privately, but the results have not been published. That is a pity, because at no time in modern history has there been greater need for a clear understanding of the transport situation. There is room for a series of up-to-date manuals discussing, without political bias, such subjects as state ownership of transport, the relations between railways and other public carriers; the commercial case for programmes of road, bridge and tunnel construction; and the real cost of extending air services. We do not want ancient history, but a fresh analysis of each subject in the light of after-war conditions. In our opinion a series of books, each dealing with a distinct problem, would be more useful than a comprehensive treatise on the lines of Professor Bigham's volume. For one thing the style of a large book is apt to become Johnsonian!

\* \* \* \*

#### Brazil to Take Over San Paulo Railway

The President of Brazil on September 14 signed a Decree, to become effective immediately, taking over the British-owned San Paulo Railway. Under this Decree the British stockholders will be paid Cr. 531,104,240 (about £6,638,803), and the Ministry of Finance has been authorised to make payment of this amount with Federal Bonds carrying 7 per cent. interest. These terms are in accordance with the original concession for the main line, which runs from the port of Santos to San Paulo and Jundiahy (86½ miles). A guarantee to the company against competing lines within 20 miles on each side (excepting at Santos) expired in April this year. In spite of its short length, this railway is of great importance in the Brazilian economy, as it carries a heavy and valuable coffee traffic to the coast for world-wide shipment, in addition to handling most of the traffic for the interior. It is notable for the use of rope-haulage on the Old Serra and the New Serra inclines on the main line, over which as much as 156,000 gross tons of traffic, passenger and goods, has been worked daily in the upward direction alone. They were described in our December 5, 1941, issue. Construction of a new direct Sorocabana Railway line from San Paulo to Santos was reported in our August 2 issue this year.

#### L.N.E.R. and Southern Railway Winter Services

Further steps towards the restoration of 1939 standards will be taken by the L.N.E.R. and Southern Railway in the winter timetables operative from October 7. Both systems announce extended restaurant and refreshment services, the L.N.E.R. providing restaurant cars on all day trains between Kings Cross, Newcastle, and Edinburgh, and the Southern Railway restoring refreshment cars on a number of services between London, the Kent Coast, and Bournemouth. Seat reservations at the pre-war charge of 1s. will be available on certain Southern Railway trains between London, Kent and Sussex resorts, Bournemouth, and the West of England. The all-Pullman "Bournemouth Belle" will be restored, and will run on weekdays and Sundays. On the L.N.E.R. the present 10 a.m. and 6.15 p.m. trains from Marylebone will run to Bradford, restoring a service which ceased at the outbreak of war. The pre-war 8.45 a.m. restaurant car train from Marylebone will also resume running, but terminating at Sheffield instead of Manchester. A new first and third class sleeping car train from Kings Cross will serve Edinburgh, and East Anglia will have a new restaurant car express from Liverpool Street for Ipswich, Lowestoft, and Yarmouth. These and other additional services are detailed on page 335.

\* \* \* \*

#### London Railway Planning

The object of the British Association conference on the rebuilding of London was not to propose specific plans, but rather to discuss the broad principles which govern the plans, making it possible to draw up general conclusions which will assist in putting the plans into effect. Among the proposals discussed were several which concern the railways, and this subject was covered by Mr. V. A. M. Robertson in a paper which is summarised elsewhere in this issue. After considering a suggested scheme to put Charing Cross Station underground, Mr. Robertson made some general observations on railway planning, most important of which, perhaps, was that the removal of London bridges, viaducts, and stations should not be carried out unless really adequate underground substitutes could be guaranteed. All railways within the Greater London area should be electrified, and engines changed, if need be, outside the county boundary, as in parts of America. Suburban should be separated from main-line traffic as far as possible, express underground lines should be provided where required, and goods depots should be removed to centres served by roads restricted to commercial vehicles at certain times.

\* \* \* \*

#### Maintenance of Signalling Relays

Although relays, especially polarised relays, already were well known in signalling work, it was the development of track circuiting and its various applications that directed particular attention to the general question of relay design and the need for periodical overhaul and servicing of relays of all types. Safety of operation depended fundamentally on the degree of dependability to be accorded to the relays, especially the track relays, which were shunted and not open-circuited to cause their armatures to assume the danger position. Gradually it was recognised that this periodical inspection work required to be organised on a thoroughly scientific and practical basis and formed one of the most important functions of the Signal Engineer's staff. Elsewhere we illustrate the shop devoted to this purpose by the London Passenger Transport Board, on whose lines relay failures, apart from all safety considerations, must be kept to the very minimum because of their serious effect on the working of the exceptionally dense traffic and the great inconvenience arising from the least delay.

\* \* \* \*

#### More British-Built 4-8-2s for South Africa

Last year a further large order for 4-8-2 locomotives for the South African Railways was placed in this country; it was for no less than sixty more engines of class "15F," and the builders are the North British Locomotive Co. Ltd. Taking into account thirty similar engines built by Beyer, Peacock & Co. Ltd., the total number of the class is more than doubled. This is a convincing proof of the confidence placed by the users in these fine

locomotives, the design of which will repay careful study, for it represents practically the maximum attainable with the limitations of that particular wheel arrangement and of the South African loading gauge and weight of rail. A grate area of 62½ sq. ft. would cause a stir even in this country with its standard gauge; how much more remarkable, then, to have accommodated it within the South African limits! Many of the detail features of these locomotives are of great interest and represent very advanced practice. We have before now, for instance, published letters and articles in which the placing of the steam turret *outside* the cab is advocated, on the grounds of keeping down the heat in the cab and of giving greater accessibility for maintenance. This particular feature is only mentioned as a single example, chosen out of many to be found on these engines, of the care and consideration given to every detail.

### L.N.E.R. Handbook of Statistics

**D**URING recent years, and especially since the defeat of Germany, from time to time we have stressed the need for the publication of adequate transport statistics. Therefore we welcome the issue by the L.N.E.R. Company of a small handbook of statistics which contains much useful information about railways, road transport, and canals. In a foreword, Sir Charles Newton states that the booklet has been prepared primarily for the use of L.N.E.R. staff, but also in the hope that it may find a wider field of usefulness among those interested in railways and transport. The Chief General Manager also explains the limitations which apply to the financial statements and statistical returns during the "control period," though he adds that a number of interesting facts regarding the changes in the conditions, under which the railways have operated since 1938, emerge from a study of the tables. It would have been helpful if a few notes had been appended to the tables to bring out these points.

The revenue statements compare the results of the years 1938 and 1945, giving particulars for the four main-line companies together and for the L.N.E.R. separately. The dividend table shows that the L.N.E.R. payment on capital receipts was 3.34 per cent. last year—67 per cent. above the 1938 dividend of 2 per cent. The corresponding increase in the four companies' payment was 42 per cent. In both years the L.N.E.R. traffic receipts were 29 per cent. of the aggregate for the four systems. The 1945 net revenue, railways and ancillary businesses, of the L.N.E.R. was £11,000,000—66.6 per cent. above 1938, as compared with an advance of 42 per cent. in the four companies' total to £41,200,000.

The statistical railway returns cover the years 1938 and 1944. In some cases the figures embrace the minor controlled railways. The returns include much the same items as the summary table issued by the Ministry of War Transport in March last, but again give separate details for the L.N.E.R. While the booklet was passing through the press the Ministry issued similar particulars for 1945, but it was too late to incorporate these figures. The L.P.T.B. statistics are also quoted from the first of these Government documents. One or two items have been added. We learn that there are 2,563 stations on the L.N.E.R., of which 1,880 deal with passenger business, and that in March, 1945, the company employed 183,900 persons out of a total staff of 597,400 engaged on the main-line railways.

The road transport figures refer to pre-war periods, save in the case of vehicles licensed. These numbered 2,541,000 in August, 1945, as compared with 3,085,000 in September, 1938. The canal traffic for 1938 is quoted from the Ministry of Transport returns, but the booklet gives the mileage of railway-owned or controlled canals open for traffic in 1940 as 614, whereas the Ministry gives the total length of railway canals as 991 miles in that year. It would appear that 377 miles were closed for traffic and presumably maintained for such purposes as supplying water to adjoining property, but it would have been better if the position had been made clear.

We gather that, if there is a sufficient demand for the booklet, the L.N.E.R. proposes to reprint it annually, revising and extending the scope of the tables as conditions return to normal. Why should the handbook not be converted next year into a four companies' publication, giving separate 1946 figures for the four main lines? A move of that kind might

rouse the Ministry of Transport to issue a full report for the current year, 1946, on the lines followed before the war, subject to any reservations entailed by the continuance of Government control. There can be no justification for restricting future returns to a summary table such as the Ministry published for 1945 in July last. A great deal of additional information obviously is in the possession of the authorities and should be made available to the public. In the meantime we congratulate the L.N.E.R. management on issuing this booklet in a neat and handy form.

### Transportation—Principles and Problems

**I**N 1922 Professor Alfred Marshall wrote that the dominant fact of the age was the development not of the manufacturing, but of the transport industries. Since that date the importance of transport as a factor in economic progress has increased everywhere, but most of all in America with its vast distances, great natural resources and multiplying population. Naturally universities in the United States encourage the study of transport economics and as a consequence there exists a strong demand for suitable textbooks. The latest addition to this literature is a large volume of 600 odd pages entitled "Transportation: Principles and Problems" and written by Truman C. Bigham, Ph.D., Professor of Economics, University of Florida.\* In the preface, the Professor explains that the book was begun because he wanted a textbook which would treat all inland transport agencies jointly. Emphasis has been laid on railways because Florida depends mainly on them for carrying her fruit and vegetables to northern markets, but waterways, pipelines, motor carriers and airlines are all passed under review as parts of the whole transport machinery.

The title does not indicate the scope of the book correctly. The author has not confined himself to a discussion of specific principles and problems. With great industry he has compiled an encyclopædic handbook, which starts by tracing the development of American transport from Indian trails to airways, in broad outline, next describes the transport agencies existing today and then proceeds to deal with questions of costs, rates, regulation, amalgamation, public subsidies and state ownership. Professor Bigham, who would appear to have read everything published about transport, attaches a full bibliography to each of his 24 chapters. In a battery of footnotes other references are given in abundance. These will be useful to a research student, but are apt to distract the attention of the ordinary reader.

Much of the information, which has been assembled with painstaking care, is of general interest. We have heard such glowing accounts of American super-highways that it is surprising to learn that in 1940 less than half of the 3,000,000 miles of rural roads in the States had a surface of any kind and only about 6 per cent. had a surface of high type. The inter-connected federal-aid highway system had in that year a length of 235,000 miles, or about the same mileage as all railway routes cover. In 1944 domestic airway routes totalled 37,000 miles and improved inland waterways extended for 28,000 miles. At the peak of wartime traffic, railways carried 72 per cent. of inter-city tonnage, waterways 14 per cent., pipelines 9 per cent. and motor hauliers 5 per cent., but nearly two-thirds of the goods formerly handled by railway less-than-wagon-load and express services now go by highway. Amalgamation of carriers has reached a stage when 132 Class 1 railways operate more than 90 per cent. of the total mileage, seven companies own 75 per cent. of the crude oil pipelines and 24 corporations fly the certified air routes. Road haulage concerns are also combining into large units, one of which works 3,300 motor vehicles over 24,000 route miles.

All forms of inter-city transport are subject to regulation with respect to rates, service, accounts and other matters. Except in the case of air carriers, predominant authority rests with the Interstate Commerce Commission. After devoting four chapters to this topic, Professor Bigham concludes that the present far-reaching control is generally satisfactory. His analysis of rates questions runs to nine chapters, winding up with an examination of inter-carrier rate relations—a theme

\* "Transportation: Principles and Problems." By Truman C. Bigham, Ph.D. McGraw-Hill Publishing Co., Ltd., Aldwych House, London, W.C.2. Price 25s.



much debated in Great Britain at the present time. He would adjust these relations by applying a basis of average cost, though competitive factors might have to be taken into account to some extent. If the Professor had his own way, he would eliminate public aid to any carrier by placing all means of transport on a user basis. Water carriers would pay tolls. Highway carriers would contribute user taxes or pay tolls, as on the Harrisburg—Pittsburgh all-weather road. As far as practicable, "it would be preferable to collect tolls, by reason of the fact that user payments could be more closely related to the cost of particular projects." This declaration supports the line of argument adopted in the article on "A logical basis for Road and Rail," which appeared in *The Railway Gazette* of August 9, 1932.

A judicial survey of Government ownership and operation of transport facilities leads to the finding that nationalisation of the U.S.A. railways is not warranted on either theoretical or practical grounds. Regulation with private ownership has not yet been a failure. Suggestions for improving the regulatory policy are made in a final chapter. Stress is laid on the need for promotion going hand in hand with control. Unless there is a wise procedure for providing and financing transport facilities, schemes may be carried out for political reasons as has happened in the past. New projects should not be undertaken unless the evidence shows that they will pay their way.

In these days when prejudice and party spirit are rampant in many quarters, it is a pleasure to come across a book which discusses a large number of contentious points with scrupulous fairness and moderation. The author aims high, his primary objective being to promote the establishment of more rational transport policies. At least he has succeeded in showing the necessity of bringing sound economic reasoning to bear on problems which cannot be shelved in any fully developed country and are especially pressing for solution in the United States.

### Railway Charges

SOME misapprehension appears still to exist as to the attitude of the railway companies in connection with the inquiry by the Charges (Railway Control) Consultative Committee which opened on Monday, September 16. The position was explained fully by the Minister of Transport in the House of Commons on May 29 last and is briefly as follows. In spite of an average increase of about 70 per cent. in railway costs, railway charges had been increased by that date only by 16½ per cent. generally and by 10 per cent. in the case of workmen's fares, season ticket rates, and L.P.T.B. fares. Because of the rapid drop in Government traffic, it was estimated that instead of the £62½ millions net revenue earned by the controlled railway undertakings in 1945 (£19 millions in excess of the fixed annual sum of £43½ millions payable by the Government during the period of control), the net revenue earned during 1946 was estimated at £3½ millions (a deficit of £40 millions compared with the fixed annual payment).

The Government therefore decided, as a first and urgent step, to increase as from July 1, passenger fares to 33½ per cent. over pre-war and workmen's fares, season ticket rates and charges for goods train traffic to 25 per cent. over the pre-war. These increases were estimated to yield £30 millions in a full year, making the total estimated net revenue for 1946 some £33½ millions, which is £10 millions less than the amount payable to the companies.

The Minister pointed out that, as compared with the level of these new increases, the price of coal had risen by 97.9 per cent., cotton goods by 98.2 per cent., wood by 80.8 per cent., the wholesale price of milk and general cargo liner charges by 100 per cent.

As a second step he intimated that he had asked the permanent members of the Railway Rates Tribunal to act as a Consultative Committee and advise him, after public inquiries, the best method of adjusting charges so that during 1947 the net revenue earned would approximate the fixed annual sums payable to the railways under the railway control agreement. The first inquiry into the level of L.P.T.B. fares has been held, but the Minister has not yet published the Committee's report or indicated what increases he proposes to make.

So far as the inquiry into the railway companies charges is concerned, the Committee was directed, when considering the

necessary adjustments in charges, to take into account all relevant considerations and, while aiming at an equitable distribution of charges between the various classes or group of classes of traffic, to have regard to the Government's policy of full employment and to the importance of maintaining adequate coastwise services. The railway companies also were asked by the Minister to forward such statements and estimates as the Committee might require and generally to give the Committee such assistance as is in their power. Accordingly, Mr. C. R. Dashwood, Chief Accountant, G.W.R., and Chairman of the R.E.C. Accountants' Committee, is giving evidence on financial matters, and Mr. Frank A. Pope, a Vice-President of the L.M.S.R., evidence on commercial matters. The position, therefore, is that the Minister of Transport has decided that railway charges are to be raised in 1947 to a level which the Committee estimates will yield a net revenue approximating the fixed annual payments.

The railway companies will reap no benefit if the revised charges produce more than the required sum, neither will they suffer if the revenue falls short of the required figure. In either case the difference is the concern of the Exchequer as, while control lasts, the companies will receive their fixed annual sums. The railway companies have recommended to the Committee that the charges for passenger and goods train traffic should be increased to a uniform 37 per cent. above the pre-war level and stressed the point that this recommendation was based solely on railway considerations, without regard to the questions of national policy referred to in the Minister's remit to the Committee. The adoption of this proposal would involve an increase over the present level of charges of 9.6 per cent. in the case of freight traffic, workmen's fares, and season ticket rates, and 2.75 per cent. in passenger fares and parcels rates. With an overall increase in railway expenditure which has now risen to 75 per cent. over pre-war, an overall increase of 37 per cent. cannot be regarded as unreasonable.

As to the general question of the lower increases applied to freight traffic, workmen's fares, and season ticket rates since 1939, the railway companies feel that if concessions are to be made in railway charges to give effect to Government policy, the cost entailed should be borne by the National Exchequer and not by the railway users alone. *Prima facie*, it is also unreasonable that ordinary passengers travelling by railway should be required to subsidise, by means of unnecessarily high fares, traders sending freight traffic by railway or the purchasers of season tickets and workmen's tickets.

When formulating its recommendations to the Minister, however, the Committee has been directed, *inter alia*, to aim at an equitable distribution of charges between the various classes or groups of classes of traffic. In this connection it will be recalled that this is precisely what the Railway Rates Tribunal did after a most prolonged inquiry under the provisions of the Railways Act, 1921, when it settled the standard scales of charges to be applicable to all classes of traffic to become operative on January 1, 1928. To what extent the Committee will feel it desirable to recommend alterations in the general balance of these scales following its direction to have regard to the Government's policy of maintaining full employment, remains to be seen.

### Indian Railways in 1944-45

THE annual report for the year ended March 31, 1945, compiled and published by the Indian Railway Board, after recording decreases in yield of all the principal crops in the sub-continent as compared with the previous year, states that railway earnings for the year under review again established a new record. Gross traffic receipts of Government-owned and -worked lines amounted to Rs. 216.38 crores (£162,285,000) as compared with Rs. 185.43 crores in 1943-44, the increase thus being Rs. 30.95 crores (£23,212,500). Working expenses totalled Rs. 123.34 crores (£92,505,000) as against Rs. 90.10 crores in the previous year, or Rs. 33.24 crores (£24,930,000) more. The sum set apart from revenue for depreciation was Rs. 17.01 crores (£12,757,500), compared with Rs. 16.87 crores in 1943-44, Rs. 14 lakhs more.

The operating ratio of working expenses—including appropriation to the Depreciation Reserve Fund but excluding suspense—to gross earnings, therefore, was 65.14 as opposed to 57.96 in the year before. Miscellaneous transactions pro-



vided a net receipt of Rs. 3.24 crores, and payments to worked lines as their share of earnings amounted to Rs. 1.93 crores. Net revenue thus totalled Rs. crores (216.38+3.24) less (123.34+17.01+1.93) or Rs. 77.34 crores (£58,005,000) as opposed to Rs. 79.37 crores (£59,527,500) in 1943-44, a fall of Rs. 2.03 crores. Interest charges amounted to Rs. 27.45 crores (Rs. 28.53 crores in the year before), the rate of interest having fallen from 3.92 to 3.68 per cent. The net gain after meeting all charges, including depreciation and interest, therefore, totalled Rs. 49.89 crores (£37,417,500). This surplus provided a contribution of Rs. 32 crores to the general revenues of the Central Government, leaving Rs. 17.89 crores to be credited to the Railway Reserve Fund.

The principal traffic increases responsible for these satisfactory results were passenger, though there was also a slight increase in goods traffic handled, earnings being substantially higher under both heads. These increases were due mainly to a greatly enhanced number of public passengers carried, and to increased military and parcels traffic, together with a continued trend towards higher-rated goods traffic. The results are the more remarkable when it is realised that they occurred despite reduced passenger services, a continued campaign against unnecessary travel, and a deliberate curtailment of non-essential goods traffic. The following table compares the 1944-45 figures with the revised figures finally recorded for 1943-44:—

Items	1943-44	1944-45	Percentage variation
Number of passengers carried (millions) ... ..	789.9	926.7	+17.3
Passenger-miles (millions) ... ..	32,506	37,591	+15.6
Passenger earnings (crores) ... ..	Rs. 67.17	Rs. 76.45	+13.8
Average rate charged per passenger per mile ... ..	Pies 3.97	Pies 3.90	-1.8
Average miles a passenger was carried ... ..	41.2	40.6	-1.5
Freight tons carried (millions) ... ..	96.7	101.7	+5.2
Net ton-miles (millions) ... ..	28,379	28,411	+0.1
Goods earnings (crores) ... ..	Rs. 103.23	Rs. 114.46	+10.9
Average rate charged per ton per mile ... ..	Pies 6.98	Pies 7.74	+10.9
Average miles a ton of goods was carried ... ..	294	279	-5.1

N.B. Rs 1 crore = Rs 100 lakhs = £750,000. Also, 1 pie =  $\frac{1}{4}$  anna, =  $\frac{1}{16}$  rupee, and is roughly equivalent to  $\frac{1}{16}$  d. 3.9 pies are approximately 0.37d. and 7.74 pies are 0.725d.

The Railway Budget presented in both Houses of the Legislature on February 15, 1945, provided lively subsequent discussions on (1) the rolling stock programme and the Government's proposals for financing it, with particular reference to their effect on the railways' contribution to general revenues, (2) the Government's policy regarding railway participation in road transport, (3) overcrowding in trains, (4) accident inquiries, (5) inconveniences of third-class travel, (6) Indianisation in the higher grades of the railway services, (7) locomotive and boiler building in India, (8) post-war rehabilitation and development of railways, (9) increase in wages, (10) compulsory extension of provident fund benefits to lower-paid employees, and (11) the reduction in hours of work. Of the various cut motions tabled, those on (5), (6) and (11) were adopted, as were others on the inadequacy of the scale of dearness allowances to railwaymen, and the acquisition by Government of inland waterway services in Assam, Bengal and Bihar, and their being worked as integral parts of various railway systems.

The contract with the Bengal-Nagpur Railway Company—the working agency of that Government-owned system—was terminated prematurely as from October 1, 1944, when the line was brought under Government management. During the year, the Government also decided to purchase the following branch lines: (a) the Dibru-Sadiya Railway (95 miles), owned by the Assam Railways & Trading Company, (b) the Podanur-Pollachi Railway (25 miles), (c) the Hoshiarpur-Doab Branch Railways (91 miles), and (d) the Sialkot-Narowal Railway (39 miles).

The railways' war effort increased throughout 1944-45, necessitating further curtailment of rail capacity for civilian use. Operating difficulties also increased due to inability to procure stores and spare parts. Arrears of maintenance accumulated still further, and the travelling public was put to considerable inconvenience in one way and another. The coal situation continued to cause anxiety, as supplies were insufficient and quality so bad as to cause an undue number

of engine failures and much loss of time to trains. The inability of the fighting services to spare the services of experienced railwaymen employed directly on war work seriously handicapped general supervision, and various road-rail schemes were introduced to relieve the overtaxed railways by providing alternative means of public transport. Floods and cyclones caused interruption of traffic on most lines during the year. There were also a number of enemy air raids on areas served by the railways, but A.R.P. functioned satisfactorily and the morale of the staff continued to be excellent.

Because of great expansion of work in the Railway Board's office, the Establishment, Mechanical & Stores, and Traffic Directorates had to be strengthened by the appointment of additional directors and deputy directors, and by the general reorganisation of these directorates. Stores were separated from Mechanical, and Traffic was split up under Directors of Transportation, General & Commercial, and Rail & Road Co-ordination.

Post-war planning to provide large sums for overdue rehabilitation and enable railways to keep abreast of the general development of the sub-continent envisaged a reduction in the number of passenger classes, future classes to correspond to existing second, intermediate, and third classes, though air-conditioned coaches would be provided additionally on important mail and trans-provincial trains. Further improved amenities for third class travel were also to be expected and the number of lower-grade staff quarters was to be increased materially. Consideration of electrification and the construction of new lines and replacement of those dismantled during the war were also included in the plans. As a result of the Inglis-Appleton Mission, steps were being taken to speed up trains by curtailing time occupied in watering engines, and to improve the efficiency of staff generally. Additional crossing stations were being provided, and locomotive yard layouts were being improved. Feed-water treatment was under investigation and additional break-down cranes were on order as recommended by the mission. Tele-communication improvements and remodelling of yards were also being undertaken at the instigation of the mission. During the year considerable progress was also made in the provision of wireless networks on railways as supplements to line communications, particularly for use during emergencies. These communications were transmitting over 50,000 messages a month, a figure that was still rising rapidly at the close of the period under review.

The Railway Board issued a directive during the year laying down its policy on the operation of road transport by railways, and suggesting the adoption of steps for the running of passenger and goods services. In implementing this policy all the principal railways inaugurated such services. Based on the consulting engineers' complete proposals for the remodelling of the locomotive workshops at Kanchrapara (Bengal-Assam Railway), officers on special duty prepared detailed plans and estimates for the remodelling. Negotiations were also concluded with Tatas for the sale to that firm of the East Indian Railway Singhbhum shops, and special machinery for boiler-making in them was ordered in the United Kingdom. An order for 100 boilers for superheater goods engines was placed on these shops in October, 1944. Ajmer shops, Bombay, Baroda & Central India Railway continued to build both broad- and metre-gauge locomotives.

The only new railway construction carried out during 1944-45 consisted of three short avoiding or loop lines aggregating 8.87 miles in length. No new surveys were sanctioned. To meet war demands for material, a further short length of 9.37 miles of line was closed to traffic and dismantled. In April, 1944, a director-general of railways was appointed to represent the Railway Board in the Calcutta area, and to direct and control all broad-gauge lines in and around that city. He was a member of the Assam Line of Communications Panel, presided over by the Deputy Director, Movements (Eastern), and responsible for regulating all military traffic on the line of communications. To rationalise workshop manufacturing capacity, considerable progress was made by seven geographical groups to achieve self-sufficiency in the manufacture of locomotive, carriage, and wagon spare parts. On the whole, however, this report is an even more colourless document than usual, though its statistical comprehensiveness remains unchallenged.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Oil-Burning Locomotives—Back to 1920

London, September 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was surprised to read the editorial note headed "Oil-Burning Locomotives—Back to 1920" in your issue of September 6, as its inference is that British railways' experience of oil fuel is limited to the flash-in-the-pan experiment of 1920. It seems to have been forgotten that the Holden system, introduced originally in 1893, was in extensive use on the Great Eastern Railway about the turn of the century when other railways also gave it thorough trials. Some 60 engines were built or equipped as oil-burners on the G.E.R. alone, including a number of those handsome 4-4-0s, the Claud Hamiltons, then resplendent in their blue livery. The L.B. & S.C.R. was among the other lines that had oil-burning engines running for some time. The system definitely was a practical success and was dropped only when rise in the price of oil fuel made it an uneconomical competitor of coal.

Large numbers of British-built locomotives have also been running for several decades in other countries, notably India—on the N.W.R. and also previously on the G.I.P.R.—and in South America. Our locomotive builders are, therefore, *au fait* with liquid fuel equipment and could doubtless advise the railway companies if requested to do so.

Yours faithfully,

"RETIRED RAILWAYMAN"

### A Dump of "Austerities"

261, Purley Way, Croydon,  
Surrey, September 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—It was with real regret that I observed in your issue of September 13 the photograph of W.D. 2-8-0 austerity locomotives stored at Stonor, Kent. For some time before my release in May this year, I was the officer at Krefeld running shed responsible for preparing a large number of these locomotives for shipment to this country *via* Calais.

They were originally loaned to the German Reichsbahn Direction in the critical days of 1945 to keep essential transport moving, and I saw them working heavy coal and other goods trains out of Hamm, Wanne Eickel, Vorhalle, and other large yards of the Ruhr, with German drivers. This spring they were withdrawn under orders from C.C.G. to the regret of the German drivers, who found them reliable machines, although lacking some of the usual fittings to which continental drivers are accustomed. The Germans were forced to fall back on many ramshackle locomotives, which were blowing steam at many likely joints, and some unlikely ones.

Considering the vital traffic from which these 2-8-0s were withdrawn, I consider it a scandal that they should be rusting away at Stonor. (The connecting rods, by the way, were originally clamped alongside on wooden blocks, and not dumped in the tender.)

Yours faithfully,

J. D. M. PARKER.  
M.A., Lieut. R.E.,  
late 164 Railway Operating Company, R.E.

### Power-Bogie Electric Locomotives

Milan, September 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of August 16 you publish a description of a new Brown-Boveri electric locomotive of the Lötschberg Railway, and write it perhaps represents the most advanced stage of electric locomotive in Europe, whereon everyone could agree. But you go on and say: "A radical departure has been made from standard Continental practice in introducing the double power-bogie wheel arrangement, with no carrying axles." Owing to war perhaps you have not had news about the direct-current, 3,000V, Bo-Bo-Bo type, Group "E.636" locomotives of the Italian State Railways, the first of which was put into service in 1939. Some 150 of them have been built by Breda, Ansaldo, and other firms, according to the design of the State Railways.

The locomotive "E.636" have three power-bogies, without any solid frame; on them lay two half-cabins, to avoid any change in axle loads being caused by spring regulation. The gear ratio can easily be changed from 1:2.32 to 1:3.10 without replacing the axle gear, and thus the engine performs heavy goods service (1,400 tons on level track; 100 tons on a gradient of 1 on 100, at 55 km.p.h.; 600 tons on a gradient of 1 on 50 at the same speed), and passenger trains service (120 km.p.h. maximum speed). The locomotive runs with a quite unusual

steadiness, almost as a passenger coach. The weight is of 96 metric tons, the power some 3,000 h.p., with six single-driven axles.

The weight per horsepower is comparatively high, owing to the use of the standard State Railways equipment (motors, switches, cast-iron grid resistances, and so on) with which yet more than 700 direct-current locomotives have been equipped since 1929. The employment of other motors is envisaged, to reach 4,000 h.p.

I beg your pardon, Sir, of the language errors I have doubtless made.

Yours faithfully,

GIORGIO MEREGELLI  
Electrical Engineer

### Single-Line Working

c/o Divisional Superintendent, G.W.R.,  
High Street Station, Swansea, September 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Many of your readers probably will have vivid memories of apparently interminable journeys on single lines both at home and abroad during recent years. I recently found in a book called "Sea and Sardinia," by D. H. Lawrence, whom I had never thought of in connection with railways, the following passage which recalls happier times and a more care-free atmosphere than we are accustomed to to-day:—

"Sicilian railways are all single line. Hence, the *coincidenza*. A *coincidenza* is where two trains meet in a loop. You sit in a world of rain waiting until some silly engine with four trucks puffs alongside. 'Ecco la *coincidenza*!' Then after a brief conversazione between the two trains *diretto* and *merce*, express and goods, the tin horn sounds and away we go, happily, towards the next coincidence. Clerks away ahead joyfully chalk up our hours of lateness on the announcement slate . . . We come to a station where we find the other *diretto*, the express from the other direction, awaiting our coincidental arrival. The two trains run alongside one another, like two dogs meeting in the street and sniffing one another. Every official rushes to greet every other official, as if they were all David and Jonathan meeting after a crisis. They rush into each other's arms and exchange cigarettes. And the trains can't bear to part. And the station can't bear to part with us. The officials tease themselves and us with the word *pronto*, meaning ready. *Pronto!* and again *pronto!* And shrill whistles. Anywhere else a train would go off its tormented head. But no! Here only that angel's trumpet of an official little horn will do the business. And get them to blow that horn if you can. They can't bear to part."

Yours faithfully,

J. C. A. WHITWORTH

### Freight Traffic Movements

Cambridge, September 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your September 13 issue an editorial note suggests that the railways have found it easier to deal with freight movements than with passenger business, because the number of locomotives available last year was 18,728 as compared with 18,469 in 1938. On the contrary the following comparison between the two years appears to show that the railways had an extremely hard struggle to keep their freight traffic moving at all in 1945:—

- (i) increase of 259 in number of engines available, or 1.5 per cent.;
- (ii) increase in the number of railway-owned wagons under repair from 18,800 to 68,540, with a resultant decrease in the available stock from 644,800 to 609,300, or 5.5 per cent.;
- (iii) increase of 5,757,000,000 in ton-miles to be worked, or 35 per cent.;
- (iv) increase in length of haul from 59 to 77 miles, or 30 per cent.;
- (v) increase in train load from 122 tons to 155 tons, or 27 per cent.;
- (vi) increase of 21 per cent. in "freight engine hours in traffic";
- (vii) decrease in "wagon miles per train engine hour" from 261 to 213, or 18 per cent.;
- (viii) decrease of 1½ miles per hour in freight train speed, or 18 per cent.

The best that can be said for 1945 freight operating is that movement was slightly better than in 1944, but ton-mileage was then 50 per cent. above the 1938 level. It would be instructive if you could indicate how things are going this year.

Yours faithfully,

EAST ANGLIAN

# The Scrap Heap

NEXT WEEK'S RAILWAY CENTENARY  
Lancaster to Oxenholme (20 miles), Lancaster & Carlisle Railway, opened September 22, 1846.  
Oxenholme to Kendal (2 miles), Kendal & Windermere Railway, opened September 22, 1846.

## BLACKFRIARS AND ST. PAUL'S

There was an echo of a main-line station renaming on September 3, when tickets bearing the name "St. Paul's" were issued at Blackfriars, Southern Railway, because of a temporary ticket shortage. St. Paul's, of course, was the name of this station until February 1, 1937.

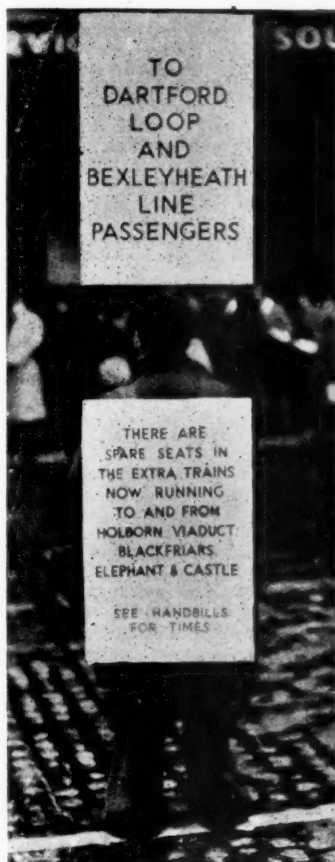
## 100 YEARS AGO

From THE RAILWAY TIMES, SEPT. 19, 1846

**ITALIAN AND AUSTRIAN RAILWAY COMPANY.**—A General Meeting of the Shareholders will be held at the London Tavern, on Saturday, the 26th inst., at One o'clock precisely. All Shareholders attending the Meeting will be required to exhibit their Scrip Shares.

WM. JACKSON, Chairman.  
Italian and Austrian Railway Company's Office, 112, Bishopsgate-street, London, Sept. 15, 1846.

## Railway Sandwichman



A Southern Railway innovation at the approaches to Cannon Street, Charing Cross, and London Bridge Stations recently to draw attention to improved services

Fourteen clocks, three barometers and many cups and trophies have been won by Mr. Charles Edward Constant, one of the best-known sporting personalities of the London Transport staff, who is retiring, after over 56 years in railway service, at the age of 69, from his position as painter in the Signal Engineer's Department. Mr. Constant won his first race at the age of 12 when he was entered as a railwayman's son in sports at Lillie Bridge. His most recent race was in the Home Guard sports at Barnes, when he came third, at the age of 68. At the age of 50 he won the 300 yards veterans' race in the N.U.R. all-railway sports, covering 8 yards a second in very bad weather. He has run at every district Railway and London Transport sports gala, and until recently was official judge and timekeeper for the Middlesex County Athletic Association.

## NAMED TRAINS IN THE U.S.A.—5

Name	Passenger	Scheduled run
Narragansett	... N.Y., N.H. & H. Boston—New York	
Nickel Plate Limited	... N.Y. & St. L.: Chicago—Cleveland	
Night Hawk	... D. L. & W. land—New York	
Nightingale	... C., B. & Q.: Al- St. Louis—Kansas City	
Oil Flyer	... Chicago & North Minneapolis—Omaha	
Olympian	... Atchison, Topeka—Kansas City—Tulsa	
Onondago	... Chicago, Milwaukee—Chicago—Spokane	
Owl	... kee, St. Paul & —Seattle—Tacoma	
Pacemaker	... Pacific New York Cen—Syracuse—New York	
Palmetto	... Delaware, Lacka- New York—Bing- hamton—Buffalo	
Paul Revere	... tern New York Cen—New York—Chicago	
Pennsylvania Limited	... Pennsylvania: R. New York—Washington—Savannah	
Man O'War	... F. & P.: Atlantic Coast Line Boston & Maine Boston—Bedford	
Merchantman	... Pennsylvania ... New York—Chicago	
Meteor	... Chicago & East- Chicago—St. Louis	
Mule	... ern Illinois Pennsylvania ... Enola—Cleveland	
Newsboy	... Illinois Central Canton—Jackson	
Nomad	... Boston & Maine Portland—Worcester	
	... Norfolk & Wes- Norfolk—Columbus	

## 1,650 MILLION RAILWAY TICKETS

Mr. Herbert Wilcoxon, who has retired from his position as head of the Ticket Ordering Section of London Transport's Fares & Charges Office, calculates that he has ordered something like 1,650,000,000 railway tickets, all consecutively numbered, in the course of his 33 years in the job. He could not be sure of the exact numbers, but he thinks that he has ordered the printing and delivery of about 1,535 million card tickets 'of the usual type, both singles and returns, as well as some 73 million seasons and 41½ million paper and voucher tickets during his career. Originally all tickets were pre-printed, but in recent years more and more have been printed automatically by ticket-issuing machines at the moment of delivery to the passenger; about 80 per cent. of London Transport's railway tickets are now issued in this way. Mr. Wilcoxon does not include these in the figure he has ordered, but even these have been under his control, as the wording on the plates used in the machines for printing the tickets has been his responsibility.

## Tips on Tough Situations

Certain difficult situations crop up that call for tact, not argument. Why win an argument and lose a friend? For example, if there is a misunderstanding or mistake in making change, don't argue. Take the customer's name, give him yours, and offer to have a check mailed if the balance at the end of the day shows you were wrong. Or if a patron wants you to take his check, simply say, "I'm sorry, but I am not permitted to do that. Would you like to talk to . . . ?" Then, if possible, refer him to someone with the necessary authority



[From "Company Manners" issued by the New York Central System

## H. G. WELLS ON TRANSPORT

It was when opening a transport exhibition at the Royal Institute of British Architects some years ago that the late Mr. H. G. Wells said that the entrance at Euston Station "marked the first impact of architecture upon railway transport." It was, he said, entirely traditional, and might have been intended for the passage of elephants or camels and belonged to the cities of the past. In his "Modern Utopia," Mr. Wells had already written:—"The tramway, the road culverts, and the bridges will all be beautiful. There is nothing in machinery, nothing in railways and iron bridges and engineering devices, to oblige them to be ugly."

## THE FUTURE

During 1946 it is anticipated that 450 miles of track will be renewed, together with 90 miles of points and crossings. Sixty miles will be re-laid and 100 miles equipped with new sleepers. The heavy war traffics and the lack of maintenance have combined to make high-speed running on the L.M.S.R. system impossible at the moment. The renewals planned for 1946, while not calculated by any means to restore the track to its pre-war standard of excellence, will go part of the way to achieve that object. Other plans in hand include the building of 7,106 new goods vehicles, 500 new containers which can travel on either road or rail, and the replacement of some of the seven cross-channel ships lost during the war.—From "The L.M.S. Answers Your Questions."

## THE OLD "L. & Y."

The "L. & Y.," the "L. & Y.,"

A lively recollection mine!  
Though fifty years have travelled by  
Since first I knew that famous line.  
For me no dim forgetfulness  
Hides "L. & Y." in "L.M.S."

The hard and slippery horsehair seat

With prickly edge is felt no more.

How well I knew it when my feet

Could scarcely reach the boarded floor!

Such fabric was the very stuff

To face the long, smoke-smothered  
"Sough."

The Tower looks down from Blackpool's sky,

And Blackpool's crowds look on the sea,  
And was it not the "L. & Y."

That founded such prosperity?

Yet now that name—a household word

In happier days—no more is heard.

The line that linked, from East to West,

The ships of Liverpool and Hull

Has still for me a breezy zest

No modern merger can annul.

It's still a sea-line, even when

Trains wait, becalmed, at Todmorden.—

E. T. in "The Manchester Guardian."



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### SOUTH AFRICA

#### Coastal Shipping Relieves Railway Pressure

Since the demand for railway wagons for months has been constantly in excess of supply, coal, sugar, and other commodities have on occasion been brought from Durban to Cape Town by sea. In the last twelve months six ships were used to carry 47,476 tons of coal from Durban to Cape Town. With the arrival of the new engines and wagons on order, the railways will soon have the extra capacity to cope with the increased traffic and will be able to meet all demands. More goods traffic has at present to be accommodated than was the case last year, but the railways are fully alive to the necessity of making provision for increased coal consumption during the winter months.

#### Separate Signalling Department

The Signals Branch of the South African Railways & Harbours has been detached from the Civil Engineering Department, and with effect from June 1, 1946, has been established as a separate department. A Chief Signal Engineer has been appointed under the Chief Technical Manager to take charge of the new department. Small but fully equipped maintenance workshops will be established on those systems where such facilities do not already exist, and a new shop will be erected at the Bloemfontein Mechanical Workshops to assist in the production of points, crossings, and signalling apparatus. It has been decided, in addition, to open a small laboratory for the testing and renovation of electrical signalling apparatus, and a workshop which will handle apparatus connected with the new construction work. Both will be at Langlaagte, where the main electrical workshops are situated.

### INDIA

#### Recent Accidents

On July 28 an Allahabad train ran into the rear of a Katihar train at Bhatni Junction on the Oudh Tirhut State Railway. Twenty-three passengers were killed and the guard's van and two coaches were destroyed. The "Frontier Mail," conveying leading politicians of the Muslim League, was derailed on July 31 at Derol. There was no loss of life. On August 3 two accidents occurred near Benares. One was the derailment of three loaded wagons of a goods train between Kadipur and Rawadi stations, Oudh Tirhut Railway. The other was on the East Indian Railway between Anghai and Phulpur when the engines of the 13 up "Upper India Express" and an Allahabad-Jaunpur train collided. Heavy rains have dislocated traffic in many places.

### NEW ZEALAND

#### Important Railway Contracts

The New Zealand Government has signed contracts in England for seven electric locomotives, 40 two-coach multiple-unit trains, and approximately 30 additional trailer coaches, with a large quantity of spares. Also included in the deal is a £2 million purchase of all the rolling stock needed for the complete electrification of the Wellington suburban lines as far as Upper Hutt. The electrification is part of the Government's ten-year regional planning scheme for the dominion. First de-

liveries of the new equipment, which will cost approximately £3 million will take place in January, 1948, and thereafter at agreed dates. [See also *The Railway Gazette* of June 28.—Ed. R.G.]

### WESTERN AUSTRALIA

#### Geraldton Mail Train Wrecked

At 8 a.m. on Saturday, July 27, the Midland Railway Company's Geraldton mail train, en route to Perth, was wrecked at a washed-out culvert near Wannamal, 63 miles north of Midland Junction. The permanent way was torn and twisted for 100 yd. on one side of the washaway. Seven persons were injured, and other passengers had miraculous escapes. Ambulances from Midland Junction were sent, but they had to battle through flooded country roads to reach the scene of the accident.

The engine and two vehicles crossed without mishap, but the weight of the engine apparently loosened the foundations of the culvert, which collapsed under the strain. The third coach remained upright, but its rear bogie was torn off. The next coach turned over, and the fifth coach, with bogies torn off, shot out at an angle from the rails and stopped suspended over the water. Another coach stopped, leaning at an angle.

Abnormal rains fell during the months of June and July in the south-western portion of the state, and the country in the vicinity of the mishap was inundated. Fortunately the train was travelling slowly at the time.

#### Co-ordinated Rail and Air Services

By arrangement between Airlines (W.A.) Limited and the Commissioner of Railways, an air service has been inaugurated between Perth, Busselton and Albany, with an additional stop at Narrogin. By this arrangement railway station-masters act as booking agents on behalf of Airlines (W.A.) Limited, and a percentage of earnings is paid to the Railway Department. Fares generally are in excess of rail fares, for example:—

Perth—Albany			
First class rail—single	...	...	£2 15s. 8d.
" " return	...	...	£5 10s. 10d.
Air—single	...	...	£4 10s. 0d.
" " return	...	...	£8 11s. 0d.
Perth—Busselton			
First class rail—single	...	...	£1 4s. 0d.
" " return	...	...	£2 7s. 6d.
Air—single	...	...	£3 0s. 0d.
" " return	...	...	£5 14s. 0d.

The service operates thrice weekly to Albany and once weekly to Busselton.

### UNITED STATES

#### Report on Naperville Collision

The report of the Interstate Commerce Commission on the collision at Naperville on April 25, when the "Exposition Flyer" of the Chicago, Burlington & Quincy ran into the rear of a preceding passenger train which had been stopped for examination, concludes that the accident was caused by "failure to operate the following train in accordance with signal indications." As reported in *The Railway Gazette* of June 21, 45 persons were killed, comprising 36 passengers and nine railway employees. The report states that the "Exposition Flyer" approached Naperville at about 80 m.p.h. Signal 227-1, which was visible from the control com-

partment of the diesel-electric locomotive throughout a distance of 5,000 ft., is held to have been passed when showing "approach," an aspect requiring an immediate reduction of speed in order to stop short of a train or other obstruction. Signal 228-1, which was found to have shown "stop-then-proceed" was also passed. Examination of the locomotive after the accident revealed no indication of an emergency brake application having been made.

#### End-Buffering Stresses on Lightweight Stock

In commenting on the damage sustained by the rear vehicles of the stationary train, the report draws attention to the risks which may arise from the use of lightweight cars between or ahead of standard cars unless the resistance of the lightweight cars to end-buffering stresses has been found by suitable tests to be substantially the same as that of the standard cars. Mr. Ralph Budd, President of the Burlington, has stated that his system has operated 200 million car-miles with lightweight vehicles since 1934, and he considers as a result of the designs and actual strength tests that all these vehicles meet the end-buffering stress requirements referred to in the report as "the present standard."

### DENMARK

#### The Summer Timetable

From June 3 the summer timetable has been in operation. Whereas the previous timetable gave about 50 per cent. of the pre-war passenger service, the new one gives 72 per cent. Before June there was only one express service (not counting the "Lyntog") between Copenhagen and Jutland; there are now three express services daily in each direction, of which one has sleeping cars.

After the war the maximum speed allowed was 100 km.p.h. on account of the condition of the track. It has now been found possible to raise this limit to 120 km.p.h., the same as before the war, thereby reducing the running time for the "Lyntog" trains between Copenhagen and different places in Jutland by up to 45 min. The "Nord Express" provides through carriages between Copenhagen and Paris.

### FRANCE

#### Proposed Briançon-Modane Line

Plans for the construction of a new line from Briançon to Modane, crossing Italian territory, are proposed in the arrangements for the peace treaty between France and Italy. According to these plans, Italy will undertake to allow French trains to cross Italian territory without customs inspection or control of passports and without undue delay.

#### Increasing Speeds

The temporary restoration of the French railways is nearing completion and the next task is the increasing of average speeds. It is reported that the Pacific locomotives of the S.N.C.F. have been adapted to haul trains of 800 tonnes at speeds of up to 90 km. an hour (56 m.p.h.). The speed of the electrically hauled *rapides* on the 276-mile Paris-Angoulême line is to be increased to 160 km. an hour (100 m.p.h.) and on that from Angoulême to Bordeaux (84½ miles) to 140 km. an hour (87 m.p.h.). The journey time for the whole journey will be reduced from 7 hr. 45 min. to 4½ hr., including two stops at Poitiers and Angoulême.

## Additional 4-8-2 Class "15F" Locomotives for the South African Railways

*The latest examples of these main-line passenger and freight locomotives have been built by the North British Locomotive Co. Ltd.*

It will be recalled that when the South African Railways first introduced the class "15F" 4-8-2 locomotives in 1938 for both passenger and freight service on main lines, it was considered that the type formed an outstanding achievement in locomotive engineering on the 3 ft. 6 in. gauge, and that the system could now enjoy the services of a locomotive capable of speeds of 60 m.p.h. with passenger trains of 540 tons, as well as being able to work goods trains of over 1,000 tons. In the Transvaal and the Orange Free State, where there are long gradients as steep as 1 in 80, the advantages of such powerful locomotives will be fully appreciated.

We have received from the North British Locomotive Co. Ltd. details of the latest examples of class "15F," sixty of which were completed at its works in Glasgow early this year. The size of the order was a measure of the confidence of the users in this particular type, and of its success in service. This is emphasised by the fact that the same builders, in fulfilling the last order placed before the war, supplied no less than 44 engines of this type, making a total of 104 to date, which comprises the majority of the engines of this type now in service.

These engines were built to the designs and requirements of Dr. M. M. Loubser, Chief Mechanical Engineer of the South African Railways, to whom must be given the credit for the improvements now embodied in the original pattern and dictated by both operational and maintenance experience. Inspection at the works of the maker has been under the supervision of the High Commissioner's Advisory Engineer in London.

These locomotives are of special interest because they form the latest, and possibly the ultimate, stage in a long history of continuous development, extending over 30 years. In 1914, the first class "15" 4-8-2 tender engine was placed in service on the South African Railways. This original design included a grate area of 40 sq. ft., a boiler pressure of 185 lb. per sq. in., a coupled wheel of 4 ft. 9 in. dia., and a maximum axle load of 16½ tons. Later orders incorporated major improvements, in succession; and in 1926 a big step forward was taken in altering the grate area to 48 sq. ft., the boiler pressure to 210 lb. per sq. in., the coupled wheel dia. to 5 ft., and the maximum axle load to 17½ tons. The first engine to have the present general dimensions, with the large-diameter boiler and an axle loading of approximately 18½ tons—the maximum allowed on the 80 lb. per yard rails used in South Africa—dates from 1935. The latest examples represent practically the maximum power attainable with the 4-8-2 wheel arrangement on the 3 ft. 6 in. gauge with the present axle loadings.

The boiler, which is one of the most interesting features of these engines, is the largest in the world for a straight-type engine on the 3 ft. 6 in. gauge. The grate area (62½ sq. ft.) is practically the maximum obtainable with this wheel arrangement and loading restrictions. The drawings illustrate the locomotives as arranged for hand firing, but the engines and tenders are so constructed that mechanical stokers can be fitted without difficulty when circumstances permit. Under a contract recently placed with the North British Locomotive Co. Ltd., 100 additional units will be

supplied in which mechanical stoking equipment will be included. The weight of the boiler (with smoke box), empty, is 35 tons.

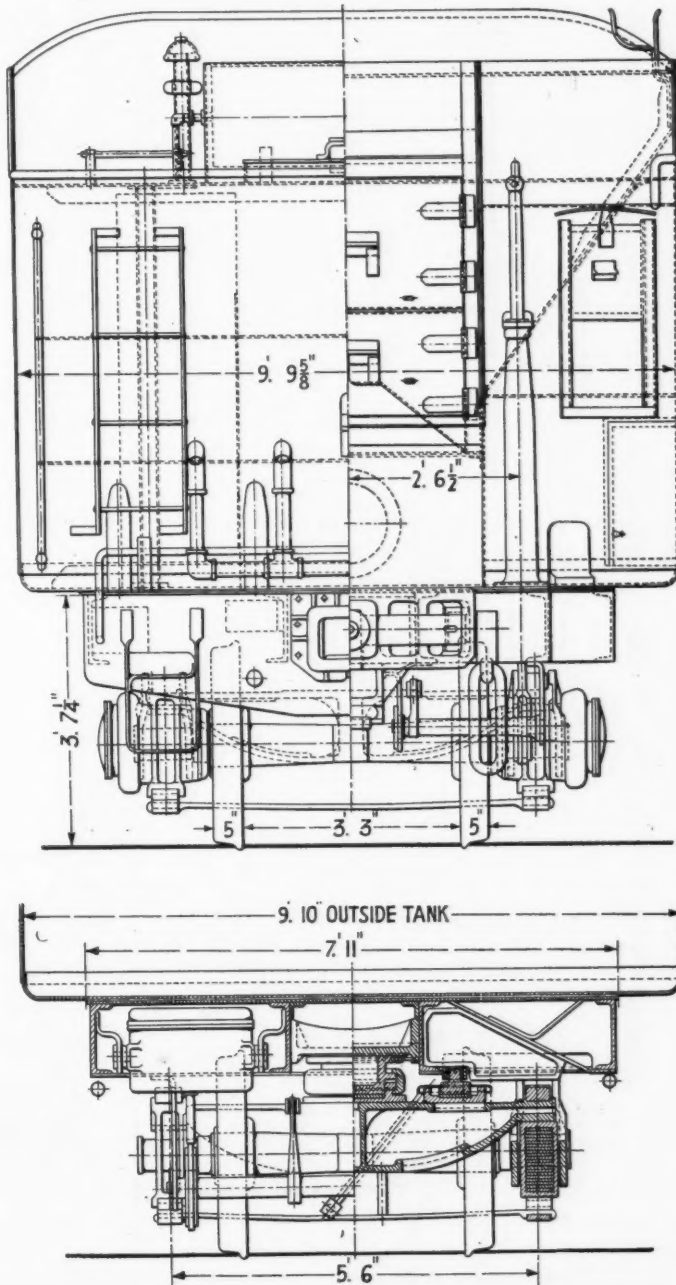
For the barrel, ¾-in. steel plates are used. The steam collector is of special interest; it consists of a number of small rising pipes arranged along half the length of the barrel. No dome is provided, as the loading gauge does not allow sufficient clearance for one.

The steam collector also supplies steam for the manifold on the firebox.

The firebox is of the round-top type; the outer steel wrapper plate is ¾ in. thick. There are five arch tubes supporting the brick arch, and adding to the evaporative surface.

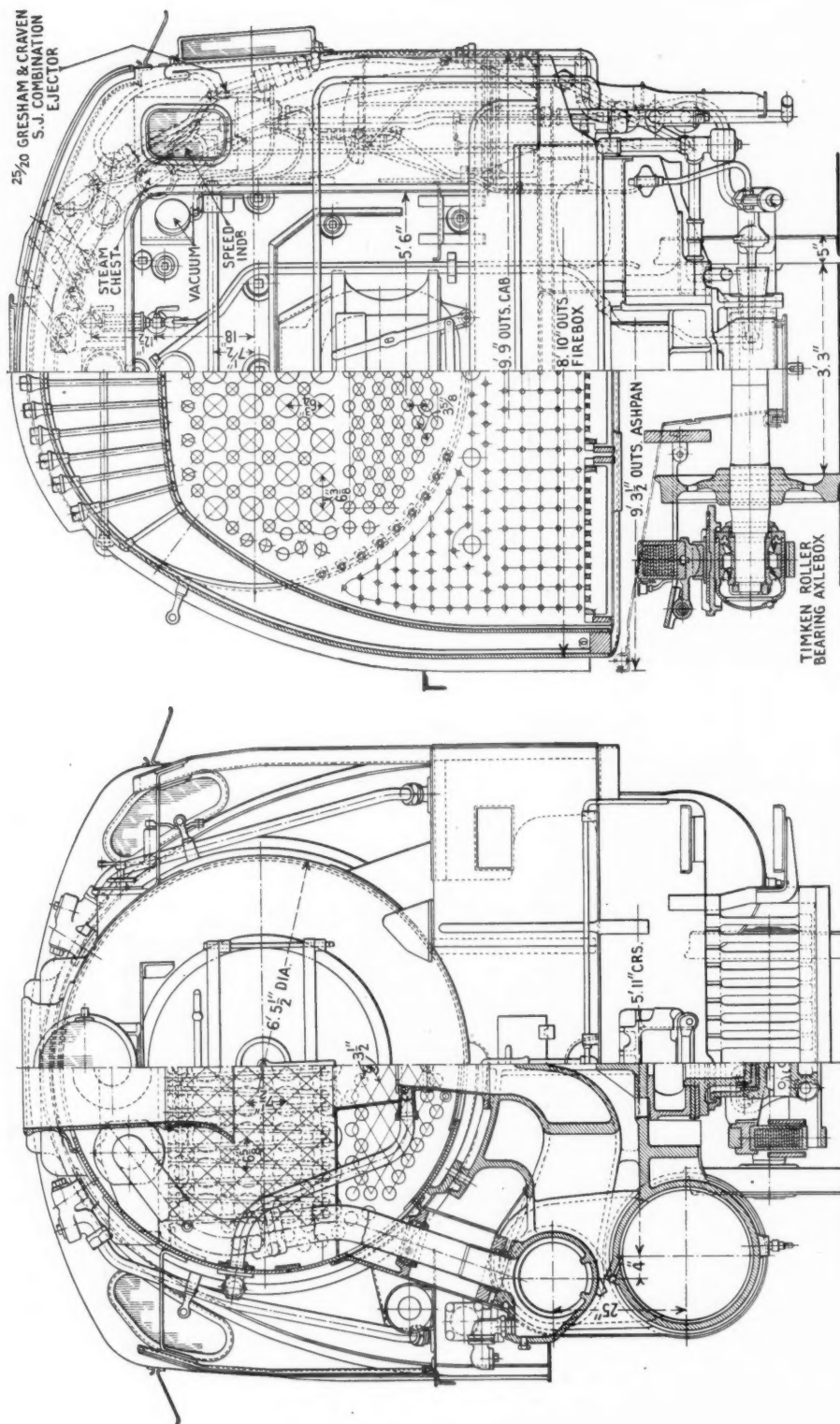
The front rows of crown stays are flexible, as also are those in the breaking zones in the sides and back plate. A ¾-in. steel tube plate is provided; the tubes are beaded over and then welded. Copper ferrules are not used.

The M.L.S. type superheater, in association with a multiple-valve regulator, with valves on the saturated steam side, is in



(Above) Half-elevations of front and rear of tender  
(Below) Tender underframes, suspension, and brake gear details

# Additional 4-8-2 Class "15F" Locomotives for the South African Railways

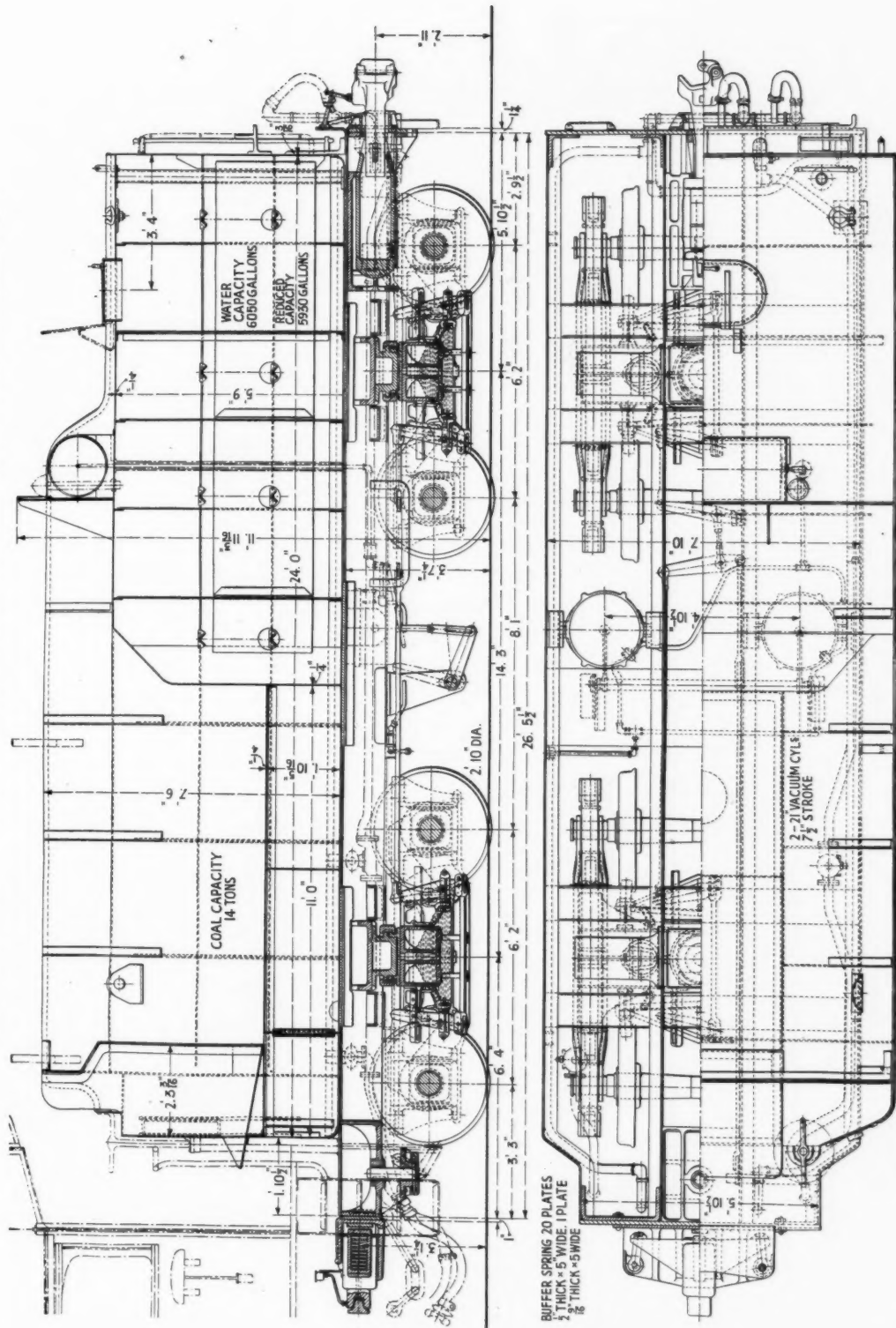


Transverse view of firebox and trailing axle suspension, also right-hand (driver's) side of cab

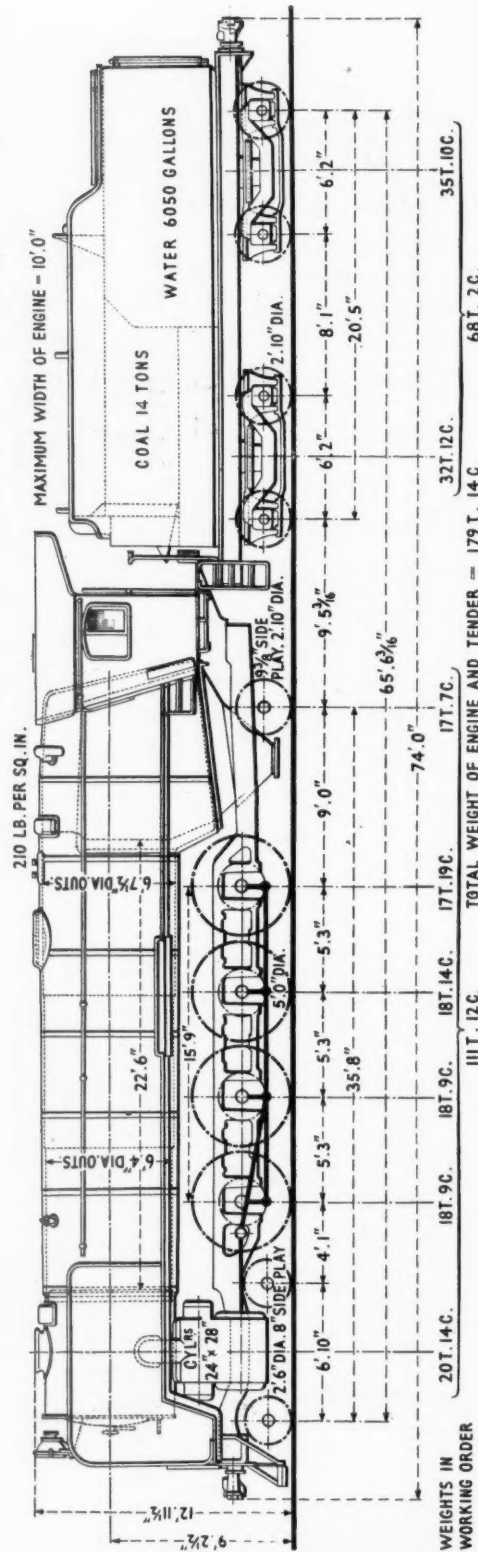
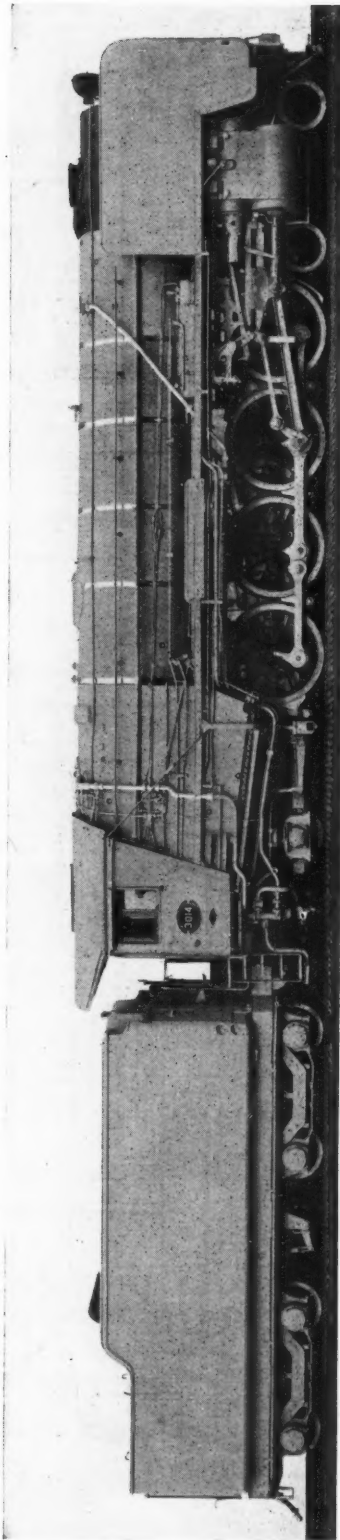
Front view of locomotive, together with arrangement of steam passages and superheater details



Additional 4-8-2 Class "15F" Locomotives for the South African Railways



## Additional 4-8-2 Class "15F" Locomotives for the South African Railways



*Diagram of the locomotive and tender showing principal weights and dimensions*

accordance with standard practice on the South African Railways.

The boiler is supported at the front end on a substantial saddle which is cast with the cylinders. At the firebox end, the weight of the boiler is transmitted to the frames by two steel shoes below the foundation ring; the shoes, which slide on grease-lubricated gunmetal liners, bear on a transverse cast-steel bracket. Special attention has been paid to the location of the mud-plug openings and ample washout openings are provided for the firebox crown. Blow-off cocks with muffled outlets are fitted on each side of the throat plate. A Clyde soot blower is fitted on the firebox back-plate. Two Davies & Metcalfe No. 13 injectors with No. 11-5 Monitor cones deliver feed water through top feed apparatus. Behind the manhole there are four 2-in. dia. Ross Pop safety valves, two on each side of the centre line. Due to the small amount of vertical clearance these have had to be sunk into the boiler steam space and inclined outwards.

#### Large Grate Area

The grate, 62½ sq. ft. in area, is a good deal larger than anything at work on the larger 4 ft. 8½ in. gauge of this country. It consists of three groups of finger bars of the rocking type (steam operated), with two drop grates incorporated in the centre section. These drop grates are hand operated. The hopper ashpan is fastened to the main framing instead of to the foundation ring; a gap is left all round between the two, through which under-fire air is admitted. Ashes slide down towards a central door discharging between the rails, and drench pipes are fitted to facilitate cleaning.

The large smokebox contains a self-cleaning spark arrester; the blast pipe orifice is 7 in. dia. Deflector plates on each side of the smokebox lift the smoke clear of the cab.

Main frames are of the bar type; each is machined from a slab weighing 11 tons; the final thickness of each slab is 5 in., the height 2 ft. 5½ in., and the length 41 ft. 9½ in. Open-hearth acid steel, of 32-38 tons per sq. in. tensile strength, is used; the finished weight of each slab is 7 tons. The frame cross-

stays are steel castings, and the horn stays double-bolted.

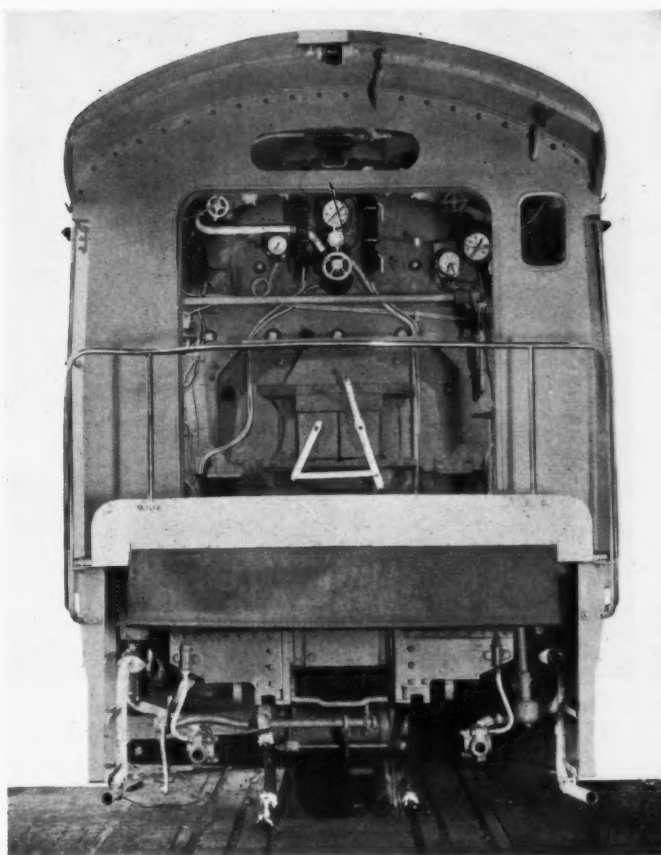
Each cylinder, with the half-saddle to

support the smoke-box, is cast separately, and a liner casting is inserted above the saddle to allow for the fitting of the standard No. 3B boiler. The piston heads have cast-steel centres, with cast-iron bull rings riveted to them. Three narrow rings are fitted. The cylinder barrel is provided with a cast-iron liner, but the rear covers are of cast steel. Both air valves and by-pass valves (the latter of the Hendrie type) are mounted on the steam chest; and a steam drifting valve, operated by the driver, is attached to the firebox.

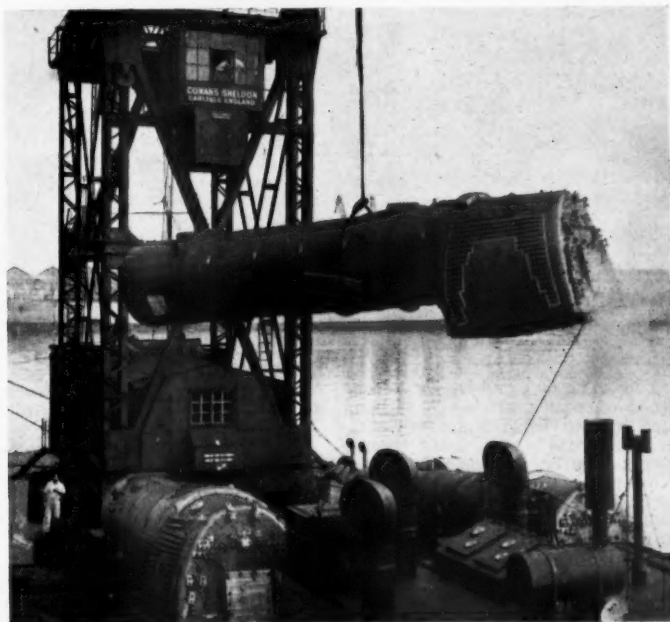
Walschaerts valve gear actuates the 12-in. piston valves, which have a travel of 7½ in. Laird cast-steel crossheads, working between two slide bars, transmit the power to high-tensile steel connecting rods, 7 ft. 5 in. between centres, driving the second pair of coupled wheels. A steam-oil catract reversing gear is provided.

Both valves and cylinders are lubricated by a Wakefield type "H" 5-feed hydrostatic lubricator; a spare feed is retained for lubricating the mechanical stoker when it is eventually fitted. Coupled axleboxes, also connecting and coupling rods, have hard-grease lubrication. Bronze floating bushes, working in fixed steel bushes, are used in all the rods. For the valve gear and certain brake gear components, as well as coupled wheel hubs, soft-grease lubrication is provided, through Ajax nipples. For slide bars, piston rods, and valve spindles, oil syphons with trimmings are used.

Normal spring layout, of the overhung type, for bar frames, has been adopted; a deep saddle is interposed between the spring buckle and the axlebox. All the coupled wheels and the trailing wheels are



Rear view of engine into cab



Boilers for "15F" class locomotives being unshipped by floating crane at Cape Town





The "Blue Train," hauled by a class "15 F" locomotive, leaving Johannesburg for Cape Town, South African Railways

grouped together for spring compensation. Total side play of trailing wheels is  $9\frac{1}{2}$  in.

Roller-bearing axleboxes are provided for both leading bogie and trailing wheels, and return cranks and expansion links are adapted also to suit roller bearings.

Vacuum brakes are fitted, with two 24-in. cylinders on the engine and two 21-in. cylinders on the tender; this is a modification of earlier engines in which a steam brake was provided on the engine, with vacuum brake on the tender. A Gresham & Craven 25/20 solid-jet combination ejector is supplied. The brake gear is compensated throughout.

Below are the principal dimensions:—

Cylinders (2), dia. x stroke	24 in. x 28 in.
Coupled wheels, dia.	5 ft.
Wheel-base, rigid	15 ft. 9 in.
Axleload	18.5 tons
Adhesive weight	73 tons
Adhesive factor (at 75 per cent. T.E.)	3.86
Weight of engine and tender (in working order)	179 tons 14 cwt.
Boiler pressure	210 lb. per sq. in.
Heating surface:	
Tubes—	
36 flue, $5\frac{1}{2}$ in. out. dia.	} 3,179 sq. ft.
136 small, $2\frac{1}{2}$ in. out. dia.	
Firebox (incl. arch tubes)	235.5 "
Total evaporative	3,414.5 "
Superheater— $1\frac{1}{2}$ in. dia. tubes	661 "
Total	4,075.5 "
Tractive effort at 85 per cent. B.P.	47,980 lb.
Tractive effort at 75 per cent. B.P.	42,340 lb.
Grate area	62.5 sq. ft.
Coal capacity	14 tons
Water capacity	6,050 gal.

The total length of the combined wheel-base of engine and tender is 65 ft.  $6\frac{1}{2}$  in.

The cab is wide, measuring 9 ft. 10 in. over the platform, and the floor is extended backwards over the tender, so that a fall plate is unnecessary. A very good feature is the location of the steam turret outside the cab, so that the heat radiating from it does not inconvenience the engine crew; moreover, the accessibility is greatly increased. Stone's electric lighting is provided; there is a 150-watt Tonum E headlight, and additional lights for the cab, including one over the

reversing gear control, as well as a bunker light and electric rear lights for the tender.

The very large tender, holding 14 tons of coal and 6,050 gal. of water, is of welded

An Alliance central automatic coupler, with 8 in. by 6 in. shank, with standard yoke and Murray friction draft gear, was incorporated in the first 45 tenders, but as



A class "15 F" locomotive hauling a heavy coal train

construction in the tank and bunker, which are carried on frames of channel section supported by two bar frame four-wheel bogies. Equalising bars and laminated springs have been adopted for these bogies, the wheels of which are equipped with Isothermos axleboxes. The intermediate buffing gear consists of a massive laminated spring located in a casting at the front of the tender. The ends of the spring are linked to the casting, and an extension of the buckle carries a manganese-steel shoe which engages with a rubbing plate at the rear of the engine frame. This spring has an initial compression of 14 tons when engine and tender are coupled.

rubber became more plentiful, Spencer Moulton type draft gear was fitted.

**VISIT OF DANISH RAIL EXPERTS.**—A delegation of five representatives of the Danish State Railways which is visiting England to study methods of smoke abatement and dispersal at locomotive sheds, arrived in London on September 14. The delegation conferred with L.M.S.R. technical experts in London on September 16, and afterwards toured L.M.S.R. motive power depots at Kentish Town and Cricklewood (September 16); Willesden (September 17); and Leicester and Derby (September 18).

## Maintenance and Overhaul of Signalling Relays

The large numbers of signalling relays used on the L.P.T.B. lines are subjected to periodical overhaul in a specially equipped workshop



General view of assembly benches

THE automatic track circuit signalling and power interlocking equipment in service on the lines of the London Passenger Transport Board necessarily includes a very large number of relays of several kinds, amounting at present to some 13,000, but to be increased by about 10,000 when the extensive new works and modernisation programme, originally known as the 1935-1940 programme, is completed. This provides for a 25 per cent. increase on the track mileage worked over by the Board's trains, over all of which the most up-to-date signalling eventually will be in service.

The relays form, from almost all points of view, the most important element in such equipment, and careful and regular attention to them and periodical re-servicing are essential to their satisfactory functioning. Safety and the uninterrupted conduct of the particularly dense service run on practically all sections of the Board's lines are a necessity, as even a few moment's delay, particularly if it should occur in the rush hours, may produce serious repercussions in the train running, requiring a considerable interval to smooth out.

### Five-Year Overhaul Period

These considerations led the Board to adopt a regular system of overhauling and re-assembling every signalling relay after a normal service period of five years, and it was found that present demands called for a workshop capacity of 100 complete overhauls per week on routine maintenance, together with a further allowance for contingencies and further increases in track mileage.

To meet these requirements in the most convenient and economical way, the relay shop at the signal overhaul works at Lillie Bridge recently has been reorganised and laid out on a progressive-working system. This has been at work since May 13, 1946, although full-capacity operation has not yet been called for. The work has been carried out to the designs of Mr. R. Dell, Signal Engineer, London Passenger Transport Board.

The scheme provides for stripping the relays as they come in, the repair or renewal of worn or defective parts, followed by re-assembly and testing on a progressive basis, each worker dealing with one of these processes only, instead of performing most or

all of them, as formerly. Rigorous inspection and examination tests are incorporated at each stage in the progression, in addition to the final testing and inspection. There are 12 different modern types of relay now in use, the cases being painted in a combination of colours to indicate their different characteristics; thus, 100-volt relays are indicated by red cases, three-position relays by yellow, and so on.

### Layout of Shop

The attached plan of the layout shows the sequence of operations. The relays are collected from outlying depots and stations and delivered to Lillie Bridge by road, where those selected each day for overhaul are hoisted by lift from the ground floor to the gallery, running round

one end of the main signal overhaul shop, in which the relay overhaul section is situated. (The shop is lighted throughout with fluorescent lighting).

The first process, dismantling, stripping, and cleaning calls for no particular description; this is followed by an examination to determine what parts are scrap or repairable. A complete set of parts for the contact unit is then placed in a tray, with new parts issued in replacement of those judged to be scrap, and a record card. This card remains with the assembly throughout and is impressed with numbered stamps by the examiners at each stage, to certify correctness of the work done. The tray in which the parts are carried has a coloured label at the front, corresponding with the colour code on the relay cases, to indicate the type.

The setting of contacts is the first stage in the overhaul process, a special contact-setting fixture being in use for ensuring an exact standard relation between upper and lower contact faces by means of weight and height tests. It is an innovation to deal with contacts at this stage; setting was previously done as part of the final testing. Carbons are ground to a uniform height by a machine in this section, the bench being provided with a fume extractor to carry away the carbon particles. Grinding is followed by an electrical test of the relay top and assembly of the whole top panel, with adjustment to ensure absolute evenness of the contact tips.

The next section is devoted to the coils and laminations, for which special jigs are in use to ensure accuracy of assembly and a proper gap being left between the coils for the vane to move in. The ironwork is finally tested for insulation on a plate energised at 250 volts. It is not considered necessary to fit the contact assembly to the same ironwork; consequently the two parts move independently up to this point.

Vane assemblies are checked in the next section; the vanes themselves have to pass (Continued on page 329)

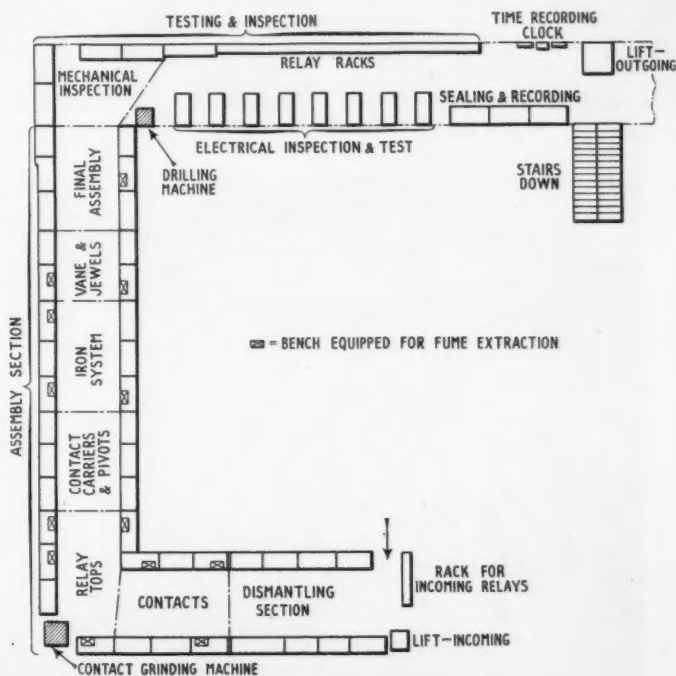


Diagram of layout showing sequence of operations

## Maintenance and Overhaul of Signalling Relays



*Contact overhaul and adjustment*



*Examination of bearings*



*Examination of vane*



*Adjustment of contacts*



*General view of test benches*

The  
int  
con  
spa  
ing

thro  
each  
and  
spine  
ing  
The  
iron  
and  
air-g



## The Greatest Bridge in Holland Temporarily Reconstructed

*A brief note on the original and rebuilt Moerdijk Bridge, embodying E.S.T.B., Callender-Hamilton, and Waterloo Bridge spans*

THE largest railway bridge in Holland—near Moerdijk—was re-opened on August 26 after temporary reconstruction. The pre-war structure was all but a mile long and carried the main line from Brussels and Antwerp via Breda and Dordrecht to Rotterdam and Western Holland across the narrowest part of the wide estuary known as the Hollands Diep.

In September, 1944, the retreating Germans took good care to destroy this vital bridge. Six of the spans were demolished beyond repair; the remaining eight were repairable. The Netherlands Railways engineers decided, however, that the four northern spans could be eliminated and replaced by an extension of the approach embankment; the rest of the bridge ob-

recovered from them and used again in the reconstruction of other spans. The firm of Penn & Bauduin, of Dordrecht, was entrusted with this important task, and Britain assisted with military bridging material.

As a result, the reconstructed bridge in its temporary form has a curious appearance, in that the spans now brought into use are in order from north to south as follow:—One Everall Sectional Truss span. One Callender-Hamilton type span. One of the temporary Waterloo Bridge spans from London. One repaired span of the original bridge. Two more Callender-Hamilton spans. Seven spans of the original bridge.

All the temporary spans are up to the

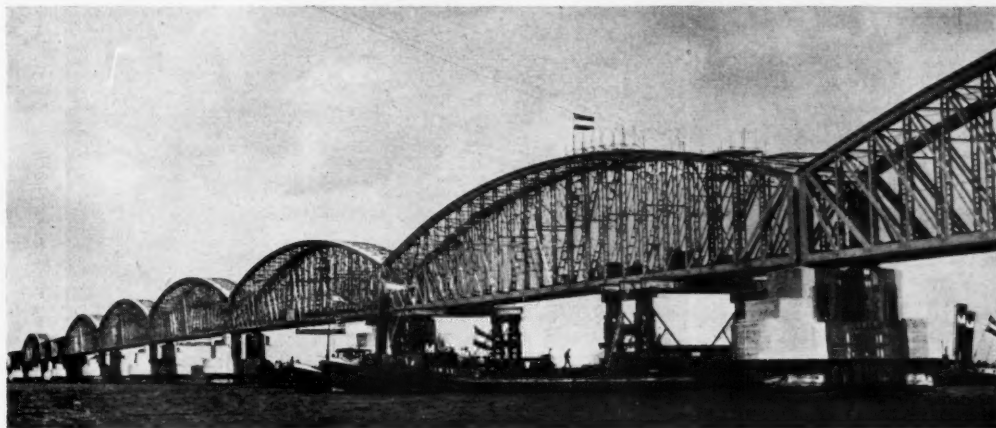


*The mile-long Moerdijk Bridge consisting of 14 uniform spans before German demolition*

This important link in the north-south international railway communications comprised 14 bowstring lattice girder spans each 342 ft. in length and weighing 600 tons.

viously had to be reconstructed with all speed. The six demolished spans lay in the channel more or less distorted and partly submerged, but it was found that some 2,500 tons of steelwork could be

same loading standard as the old, but, when conditions permit, will be replaced by permanent spans of the original general design. There will then be 10 uniform spans.



*The Moerdijk Bridge as temporarily reconstructed; the last span being placed in position. The temporary British spans can be seen in the background*

### Maintenance and Overhaul of Signalling Relays

*(Concluded from page 327)*

through a gap giving 0.001 in. tolerance on each side of the blade, to ensure flatness and correct right-angle setting on the spindle. The jewel screws in the spindle bearing are examined microscopically for flaws.

The vane assembly is now fitted to the ironwork, when the end-shake of the shaft and the exact setting of the vane in the air-gap are adjusted, and then the whole

iron and vane system is fitted to the relay top. Paint on the ironwork section is touched up at this point.

The whole relay is now ready for the final tests, first by the mechanical examiner for all visible details, including tightness of screws and security of locking devices, and then by electrical tests. A link arm is made for each relay, due to slight variations occurring in the height of the cases manufactured at various times, and the contact scale is marked off.

Last come re-assembly of side panels

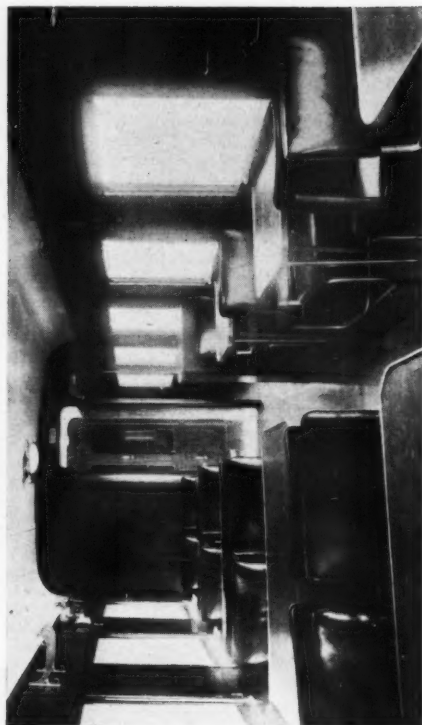
after test, screwing up, and wax-sealing, with a final operating test after sealing. The relay is booked out in the shop record book, and the card which has accompanied it through the shop is filed with the relay records in the shop foreman's office, the card completed at the previous overhaul then being destroyed. A complete statement of the repair and behaviour under test of every relay in use on the system is thus available at all times.

The time for a relay to pass through the overhaul process is about seven days.

# New Passenger Stock for the Sorocabana Railway, Brazil



*First class coach of the all-steel "400" series*



*Interior of restaurant car accommodating 28 passengers*



*Interior of 48-seat first class passenger coach*



*Second class accommodation, seating 78 in a coach*

The Sorocabana Railway has recently built in its own workshops at Sorocaba two series of all-steel welded coaches. The "400" class vehicles shown measure 55 ft. 9 in. overall and have a maximum width of 9 ft. The first class coaches weigh 27 tons, and the second class 25½ tons. The construction programme for the "400" class vehicles comprises 15 first class, 15 second class, one restaurant car, and three sleeping cars. All coaches have Spencer, Moulton shock absorbers

## RAILWAY NEWS SECTION

## PERSONAL

Major-General E. de B. Panet, C.M.G., D.S.O., E.D., Chief of the Department of Investigation, Canadian Pacific Railway, has been granted leave of absence preparatory to retirement. He is succeeded by Mr. A. H. Cadieux, C.B.E.

Among those recently elected Associate Members of the Institution of Mechanical Engineers are Messrs. S. L. Higgins, Signal Engineer's Office, L.P.T.B.; A. H. Morley, East Indian Railway; H. R. Pangu, Scindia State Railways; and William Watt, New Zealand Government Railways.

## PRESENTATION TO MR. M. L. DUFFY

A presentation was made recently in the office of Mr. J. C. Patteson, European General Manager, Canadian Pacific Railway, to Mr. M. L. Duffy, who has just retired from the position of General Agent at Liverpool for the company. The presentation was made from the senior officers of the European organisation of the Canadian Pacific Railway, and in making it Mr. Patteson said that Mr. Duffy would carry into retirement the best wishes of his colleagues.

Mr. J. W. Lumsden, District Goods & Passenger Manager's Office, Edinburgh, L.N.E.R., has been appointed Scottish Representative of the L.N.E.R. Press Relations Officer in succession to Mr. J. B. Dunlop, Scottish Area Advertising Representative, who, since 1942, has acted also as Scottish Representative of the Press Relations Officer and is now to revert to advertising duties only.

We regret to record the death on September 14, at the age of 64, of Mr. Geoffrey Marshall, Goods Manager, Southern Area, L.N.E.R., 1923-45, and lately Chairman, R.E.C. Goods Committee.

## SOUTHERN RAILWAY STAFF CHANGES

Mr. A. J. Hemens has been appointed Assistant Divisional Marine Manager, Dover.

Mr. G. A. Hobbins has been appointed Assistant for Cables & Track, Chief Electrical Engineer's Department.

Mr. V. R. B. Cooke, A.M.I.A.E., who, as reported in our September 6 issue, has been appointed Assistant Road Motor Engineer, L.M.S.R., is a son of the late Mr. C. J. Bowen Cooke, Chief Mechanical Engineer, L.N.W.R., 1909-20, and was educated at Shrewsbury School. After serving with the Royal Engineers during the 1914-1918 war he returned to complete his apprenticeship in the Road Motor Department of the L.N.W.R. He became an Assistant in 1921 and was appointed Indoor Assistant to Mr. J. Shearman, Road Motor Engineer, in 1929. During the time he was Indoor Assistant, Mr. Cooke was responsible to Mr. Shearman for the initial experiments conducted in relation to the mechanical horse.

Mr. W. Hood, O.B.E., A.R.T.C., M.Inst.C.E., who, as recorded in our May 24 issue, has been appointed General Manager, Great Indian Peninsula Railway, in succession to Lt.-Colonel R. B. Emerson, was educated at Glasgow Academies and the Royal Technical College, of which he is an Associate in Civil Engineering. He served a pupilage with Alex Findlay & Co. Ltd., of Motherwell, and was appointed Resident Engineer on



Mr. W. Hood

Appointed General Manager, G.I.P.R.

works for the Admiralty, War Office, and Ministry of Munitions. He went to India during the 1914-18 war and served five years in Military Engineering Services. In 1925 he was appointed to the Bridge Department of the G.I.P.R. and was associated closely with the design and construction of most of the major bridges on the system. In 1932 he was promoted to administrative rank in the Engineering Department. In 1936 and again in 1938 Mr. Hood was called to the Railway Board and appointed Deputy Chief Controller of Standardisation. He returned to the G.I.P.R. in 1940 as Deputy Chief Engineer, Construction, and during the recent war was responsible for the speedy construction of the railway's war works. In 1945 he was appointed Chief Engineer, the position which he now vacates to become General Manager.

Mr. W. D. Rae, B.Sc., A.M.I.C., Chief Research Chemist, Andre Rubber Co., Ltd., has been awarded his Ph.D. for his thesis, "Some studies in the bonding of rubber to metal."

## INDIAN RAILWAY STAFF CHANGES

Mr. H. Holt-Keene, Chief Electrical Engineer, G.I.P.R., has been granted six months' leave as from April 27.

Mr. R. J. J. Perry has been appointed to officiate as Chief Commercial Manager, M.S.M.R., as from April 1.

Mr. H. L. W. Stevens has been confirmed permanently as Controller of Stores, M.S.M.R.

Mr. R. O. C. Thomson has been confirmed as Controller of Stores, N.W.R.

Mr. G. A. Rowlerson, General Manager, O.T.R., has been granted six months' leave as from April 15.

Mr. R. W. Allum has been appointed to officiate as Chief Engineer, O.T.R., as from April 14.

Mr. M. J. Chughtai has been appointed to officiate as Joint Director, Establishment, Railway Board, as from June 8.

Mr. R. M. Simmons has been confirmed as Traffic Superintendent, B.B.C.I.R., as from May 23.

Khan Bahadur M. D. Sheik, Director, Establishment, Railway Board, has been permitted to retire from permanent railway service as from June 1.

Mr. A. R. Edington, C.I.E., Director, Stores, Railway Board, has been granted six months' leave as from June 5, and Mr. T. Kidd, M.B.E., has been appointed to officiate as Director in his place.

Mr. N. S. Sen has been confirmed permanently as Chief Transportation Superintendent, G.I.P.R., as from March 27.

Mr. F. G. S. Martin, Controller of Stores, E.I.R., has been granted 26 months' leave preparatory to retirement as from August 25, 1945; this cancels the previous announcement.

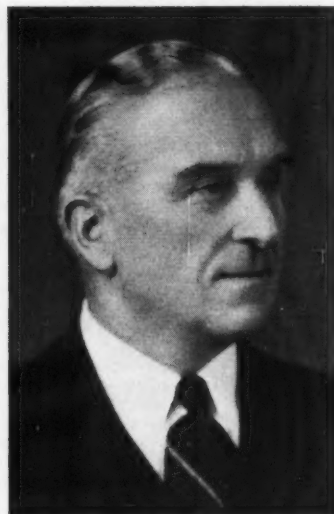
Mr. J. W. McWilliam has been appointed to officiate as Locomotive & Carriage Superintendent, B.B.C.I.R., as from May 29.

Mr. W. E. Yates, M.I.A.E., Assistant Road Motor Engineer, L.M.S.R., who, as recorded in our September 6 issue, has been appointed Road Motor Engineer, completed an apprenticeship and a course of technical training in automobile engineering in 1914. He volunteered for service in France, where he proceeded in November, 1914; he served in turn in the cavalry and as Workshop Officer, A.S.C. (Mechanical Transport), and returned to this country in 1918. He was retained in the Services for special duties until 1920. Mr. Yates commenced his railway career in the same year under the Road Motor Superintendent, L.N.W.R., as Inspector (Running), and operated in turn in the Liverpool, Manchester and Birmingham Districts. In 1922 he was transferred to the department's headquarters at Euston, where he developed a workshop organisation and vehicle maintenance system for the rapidly expanding fleet of L.N.W.R. motor vehicles. In 1925 he was appointed Assistant Road Motor Engineer, L.M.S.R. He was associated with the Road Motor Engineer, Mr. J. Shearman, in the development of the



L.M.S.R. experimental vehicle designed to run both on road and rail. In 1931-32 Mr. Yates was largely concerned in the conversion from petrol to compression ignition of a considerable number of the company's

ham). Mr. Yates is a member of a sub-committee of the Institution of Automobile Engineers dealing with vehicle performance; and is an L.M.S.R. representative on the Huddersfield Joint Omnibus Committee, on which he has served since 1937.



**Mr. W. E. Yates**

Appointed Road Motor Engineer,  
L.M.S.R.

motor vehicles. The expansion of the L.M.S.R. fleet of road motor vehicles and appliances necessitated the provision of a large number of main and sub-workshops throughout the system; and he was largely concerned with the layout and the equipping of the shops, one of which recently was opened at Bradford (Manning-

ham). Mr. E. Viner Brady, O.B.E., Assistant Divisional Engineer, Western Division, Southern Railway, who, as recorded in our August 30 issue, has been appointed Divisional Engineer, Western Division, from October 1, held a commission in the Royal Engineers (Supplementary Reserve) before the recent war, and was called up on August 31, 1939. After serving with the B.E.F., 1939-40, Mr. Brady returned to the Southern Railway as General Purposes Officer, General Manager's Office, which appointment he had held in 1939. Before joining the General Manager's Office, he had been in the Chief Civil Engineer's Office. In November, 1940, he was recalled to the Army, when he went to the Middle East on the Transportation Directorate as Assistant Director (Stores). He was responsible, among other matters, for the supplying of all construction materials (permanent way and bridging) for the construction of the Western Desert Railway, the Haifa-Beirut-Tripoli Railway, and many military depots, and subsequently for the necessary locomotives and rolling stock. In 1941 he was made responsible for "sponsoring" all imported stores and equipment for public-utility organisations in the Middle East, including the Egyptian State and Sudan Railways. In 1942 he went to India in connection with the Eastern Group Supply Council, and later in the same year visited the United Kingdom for a short period, returning afterwards to the Middle East. In January, 1944, he was recalled to the United Kingdom, and was posted to Headquarters, 21 Army Group, as Deputy-Director, Transportation

(Stores), and was promoted Colonel, serving in France, Belgium and Germany. He was made an M.B.E. in August, 1940, and O.B.E. in 1943, and was mentioned twice in despatches. For services in connection



**Mr. E. V. Brady**

Appointed Divisional Engineer, Western Division,  
Southern Railway

with the French and Belgian railways he was made a member of the Legion of Honour (Chevalier) and awarded the Croix de Guerre. On release from military duty, Mr. Brady returned to Southern Railway service, and was appointed Assistant Divisional Engineer, Western Division, from December 1, 1945.

### G.W.R. Parcels Railcar



One of the two railcars on the G.W.R. shuttle parcels service, introduced in April, 1936, and now working between Paddington, Southall, Windsor, Reading, and Ruislip. They relieve the ordinary passenger services of parcels traffic

## Planning of London and its Effect on the Railways

At the conference on London Traffic and the London Plan, held by the British Association for the Advancement of Science in London last week, Mr. V. A. M. Robertson, Chief Civil Engineer, Southern Railway, presented a paper on various aspects of the proposed plans for the rebuilding of London as they affected the railways, making it clear that the views expressed were his own and not influenced by any railway policy or programme.

The planners, he said, have not hesitated to suggest drastic action with some of the London termini and the river bridges and viaduct approaches. There are some sound reasons for their recommendations, which, if given effect to, would provide pleasanter amenities for the citizen, an opportunity to remove some of the road traffic congestion which is bound to get worse, and the possibility of making provision for improved railway facilities to the points of maximum concentration of work.

Some of the proposals of a specific nature in the various reports include:—

- The electrification of all lines leading into London from suitable interchange points.
- The separation of main line and suburban traffic.
- The rebuilding of London Bridge, Waterloo and Fenchurch Street Stations, and improvements to Euston and St. Pancras as one station, and to Kings Cross, Paddington, and Liverpool Street.
- The rebuilding of some terminal stations at two levels, with the provision of flat roofs for air landing.

One of the reports recommends as of first importance the removal of the railway viaducts and bridges over the river serving four Southern Railway stations. In view of my intimate association with these stations from 1911 to 1919, and since 1943, I would like to take one station and give my ideas on the problem. I think, perhaps, Charing Cross Station is the most

suitable to consider, because of the controversy which has existed for many years on the question of the retention or removal of this station.

Any plan to remove or rebuild Charing Cross Station, either below or above ground, must be related to an approved plan for the improvement of roads in the Strand, Trafalgar Square, Whitehall, and Charing Cross Road area, and, similarly, must be related to the existing and any proposed underground railways in the vicinity.

### CHARING CROSS TRAFFIC

It is important to appreciate the measure of passenger traffic handled at Charing Cross Station on the Southern Railway in 1938, and the following figures are, therefore, quoted, representing a weekday in February.

	During 24 hr. ...	Passengers ...
Arrivals	During 24 hr. ...	56,090
	Between 7 and 10 a.m. ...	37,095
	Heaviest hour of arrival ...	17,034
Departures	During 24 hr. ...	58,015
	Between 4 and 8 p.m. ...	37,257
	Heaviest hour of departure ...	15,534

If the measure of passenger traffic at the four stations is similarly considered, then the figures during the same weekday in 1938 show that at these four stations alone, 1,742 trains, carrying 270,000 passengers, were dealt with in 24 hours.

Despite the difficulties, I, personally, do not disavow the removal of the bridges and viaducts and the stations themselves, provided that adequate alternatives are clearly defined. These arrangements must provide for the handling of passengers in excess of those carried in 1938, and must provide for the complex problem of dealing with luggage, parcels, mails, and other facilities afforded to the travelling public by the main-line railways, and which are not as yet provided by the L.P.T.B. on its Underground trains.

Nothing should be done until it can be proved that if the removal of bridges, via-

ducts, and stations does form part of the approved plan, then these removals and the consequent effect on railway traffic must be safeguarded by additional and adequate underground railways provided with stations designed and built to take care of the anticipated future traffic needs. If such a guarantee cannot be given, then the London plan, however carefully considered, is doomed to failure.

### RESULT OF REMOVAL

The removal, without adequate replacement, of the Southern Railway terminal stations north of the river, would deprive the citizens of facilities which for years have served them well, and enabled hundreds of thousands to travel conveniently to stations nearest to their work.

I would electrify all railways within the Greater London area, and, if need be, adopt the American practice of changing locomotives outside the county boundary. I would, where possible, divorce suburban traffic from main-line traffic, and place the former below ground level in tunnels of a suitable diameter to accommodate main-line rolling stock. I would provide express underground lines where justified, and I would connect the main-line terminal stations with an underground line, arranging it so that the public enjoyed the selection of stations to suit their business, shopping, or places of amusement.

I would also consider the removal of all railway goods depots to selected centres, and I would build roads to these centres upon which only commercial and goods vehicles would be permitted to operate at certain times of the day and night. At other times I would permit normal traffic use of these roads.

The replanning of London will obviously cost many hundreds of millions in sterling, and will occupy four or five decades or more to carry out, but those of us who are privileged to be associated with planning in London today should not be thwarted by those apparent difficulties. Let a prompt start be made on the vast

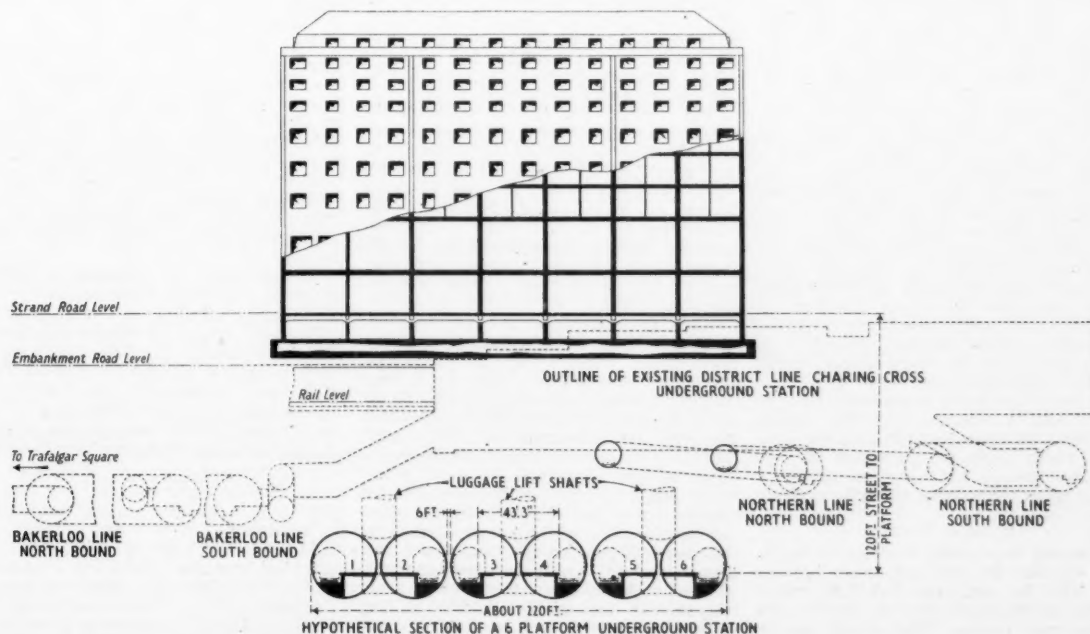


Diagram showing suggested arrangement at Charing Cross Station

amount of investigation and design which is essential.

It is not sufficient to indicate on a small-scale plan of London that this stretch of railway or that terminal station should be abolished, and that the railway traffic thus unprovided for should be taken care of by an underground link here or an express line there. Until the planners possess full engineering facts arising from existing traffics with peak-hour details, and the number of trains considered essential in future, they will be groping in the dark.

On a summer weekday in 1939, 91 trains arrived at London Bridge, Cannon Street, Charing Cross, and Holborn Viaduct between 8.30 and 9.30 a.m., and a similar number left those stations on the same day between 6 and 7 p.m. Assuming the capacity of the tube railways to be some 30 trains per hour on one track, and having regard to the special requirements of a main-line railway, it may be necessary to provide at least eight tube tunnels, four up and four down, between the Surrey Canal and London Bridge, and four tube tunnels, two up and two down, forming a circular route.

The planners have in mind projecting certain suburban services, at present accommodated at Victoria Station, over the proposed circular route. The plan provides, also, for the electrification of all suburban lines north of the river, and their linking with the Northern Area Suburban Circuit by an underground line from Paddington to Victoria and at White-chapel.

The projection of additional services over the proposed loop at Cannon Street from the Northern Area, and at Charing Cross from the Battersea direction, presupposes a general track layout so complicated that, without a detail study, no accurate opinion can be formed as to its feasibility either from a construction or operation point of view.

An approximate calculation reveals that 160 single-track miles of new underground tunnel would be required to replace the Southern Railway existing facilities via London Bridge to the London terminals excepting Waterloo (main line) and Victoria. Added to this, large diameter tunnels at stations would be essential, new rolling stock with sliding doors would be required, and also high-speed lifts, escalators, etc.

There are six platforms at Charing Cross Station and they deal with 700 trains in 24 hours on an average weekday. That a station at Charing Cross to deal with Southern Railway traffic is essential I have no doubt, and that this station should provide for main-line expresses from and to the coast is a matter for consideration. It might be argued that the suggested segregation of main line from suburban traffic could take place in such a way that the express trains would use Waterloo main-line station instead of Charing Cross.

To make this provision would entail drastic alterations to the routing of main line and coast trains now using Charing Cross, and in order to reach the existing Waterloo (Western Section) as a terminal, these trains could not be routed through London Bridge, an arrangement which would upset the balance of traffic working.

#### EXPRESS TRAFFIC

It would be possible, however, to restore and increase the old connection between the S.E.C.R. and the L.S.W.R. which existed at Waterloo prior to the building of the new station. This would provide through running between the existing Eastern and Western Sections of the

Southern Railway and also through suburban running. These points are made in order to draw attention to the extreme difficulty of excluding express traffic from Charing Cross Station and diverting it into another London terminal.

I can imagine the planners suggesting that Victoria Station should be one of the two London terminals used for main-line express trains to the Kent Coast, so that a new Charing Cross could be built below ground to deal only with suburban traffic. However, let us assume that the future Charing Cross should have six platforms, each of which must be not less than 650 ft. long, that the type of traffic will be suburban only, and, lastly, that this station should be underground.

The first question which arises, naturally, is at what depth can the station be constructed so as to pass under the river, avoid the existing tunnels of the Bakerloo and Northern Lines and the District Lines under the Embankment, and at the same time provide a physical interchange with the Underground stations at Charing Cross, Strand, and, if possible, Trafalgar Square.

I have had a diagram prepared of a possible station showing the shallowest depth at which it could be constructed in order to meet the above requirements. The vertical distance from the existing level of the courtyard outside the existing station to platform level at the new station is approximately 120 ft. This distance will entail longer escalators for passengers than any existing today, and high-speed lifts of considerable depth for parcels and other similar traffic. The locality and size of Charing Cross Station, whether above or below ground, prohibits, I presume, its use as a point for air landing, unless possibly for helicopters.

An underground station at the depth indicated would probably have to be built as a series of tunnels, and subsequently opened out to the fullest extent to give adequately wide platforms, with the maximum number of wide openings, to provide for handling passengers carried by suburban trains. The type of station I have in mind is similar to Gants Hill, built by the L.P.T.B. before the war on the Eastern Extension of the Central Line, or that of the engineers who constructed the new Moscow Underground. The station could be double-ended with escalators at the Strand and Embankment ends.

The vertical rise of 120 ft. from the platforms to the street is 40 ft. more than the maximum covered by the longest existing escalator on the L.P.T.B., and the largest escalator tunnel in existence today is one of 56 ft. dia. at Holborn. The platforms are 17 ft. wide, with many openings between them, the station tunnels being 30 ft. internal diameter cast iron, and the overall width of the station would be about 220 ft.

The reconstruction in the City of London Plan, 1944, contains drawings from which I gather there is a desire on the part of the planners that the railway bridge at Blackfriars, together with Blackfriars, Ludgate Hill, and Holborn Viaduct Stations, should be removed. The report, however, makes no major recommendations affecting railways.

In order to reach a decision on this complex problem it would be necessary for careful plans to be prepared, showing whether it is practicable to sink these lines below ground, which involves construction at a depth below the river to avoid the existing lines of the Waterloo & City tube and the District Line at Blackfriars.

As to the probable cost of putting these lines below ground, without some

scheme to work on, figures of approximate cost might be considered a mere guess. However, I have some facts which have prompted me to give a figure of approximately 17 million sterling for Charing Cross, and I am prepared to hazard a guess that similar work at Blackfriars, which should provide underground lines and stations between the river and the widened lines at Farringdon Street, would cost at least three times as much.

I am indebted to Mr. V. R. Husband, B.Sc., A.M.I.C.E., a member of my staff, for his assistance in preparing the plans from which the slide was made.

## London Transport Bus Shelter Competition

London Transport offers prizes of 300 guineas and 100 guineas for the two best designs for a kerbside bus shelter to replace the "austerity" type erected throughout London during the war. This is the first architectural competition sponsored by the Board. Proud of its reputation in the field of design, it is anxious that the present "austerity" shelter of steel construction shall be replaced by a shelter which will grace London's streets, and, at the same time, will be practical in affording shelter to people waiting for transport. With this object in view London Transport has sought the co-operation of the Royal Institute of British Architects in the design of the "perfect" shelter. The Institute has nominated Professor W. G. Holford, A.R.I.B.A., M.T.P.I., and Mr. F. R. S. Yorke, F.R.I.B.A., to act as assessors, with Mr. Thomas Bilbow, F.R.I.B.A., the Board's own architect.

The first kerbside bus shelter—a primitive wooden structure—was erected during the blitz in September, 1940, outside St. James's Park Underground Station for people changing from District Line trains to the special emergency buses. Today there are 825 temporary shelters. The new shelters will not replace the 314 steel and glass roadside shelters with seats, which London Transport began to provide in outer areas in 1935.

The perfect kerbside shelter must be dismembered easily for big parades and for road works, when pavements have to be cleared overnight; must require little depth for fixing; must be economical to make and to erect; and must show the name of the stopping place—like the experimental shelter outside the National Gallery in Trafalgar Square. It will be composed of units, each 12 ft. long, which can be fitted together to form a shelter of any desired length.

Designs must be submitted by January 8, 1947. Architects entering for the competition should apply for terms and conditions to the Chief Public Relations & Publicity Officer, London Transport, 55, Broadway, S.W.1, marking their envelopes "Shelter Competition." An exhibition of all designs submitted will be held at Charing Cross Underground Station after the judges' decisions have been announced.

**YORKSHIRE CONTRACT PLACED BY L.M.S.R.**—The L.M.S.R. states that a contract has been placed with Wellerman Bros. Ltd., of Sheffield for repairs to the pier foundation of a bridge which carries the Horbury Junction—Barnsley branch over the River Calder near Horbury Junction (Yorks).



## L.N.E.R. and Southern Railway Winter Services

*Additional trains, more refreshment services, and an extension of seat reservations mark further progress towards peacetime standards*

Improvements in the L.N.E.R. and Southern Railway winter timetables, which come into operation on October 7, are reviewed in an editorial note this week. Details of the increased and altered services of both companies are given below.

### L.N.E.R.

Restaurant cars will be provided on all day trains between London, Newcastle and Edinburgh. They will also be included on one express each way between Hull and Kings Cross, Ripon and Kings Cross, and on the 7.30 p.m. "Aberdonian" as between Kings Cross and York. An entirely new through restaurant car service is to be run between Hull, Edinburgh and Glasgow, leaving Hull at 10.10 a.m. and Glasgow at 11.10 a.m.

### NEW LONDON-BRADFORD TRAINS

Pre-war through services to be restored include restaurant car expresses between Marylebone, Leicester, Nottingham, Sheffield, Huddersfield and Bradford (at 10 a.m. and 6.15 p.m. from Marylebone and 10.5 a.m. and 4.50 p.m. from Bradford), and between Newcastle, York, Sheffield, Nottingham, Leicester and Swansea (at 9 a.m. from Newcastle and at 8.10 a.m. from Swansea).

An extra service to Gloucester will be provided by attaching through coaches to the 1.15 p.m. from Newcastle, and the present 12.15 p.m. from York to Newcastle will become a through train from Worcester.

Other additional trains include a new night express, with first and third class sleeping cars, leaving Kings Cross at 1 a.m. for Edinburgh Waverley; a new restaurant car express from Marylebone to Leicester, Nottingham and Sheffield at 8.45 a.m.; extra Sunday restaurant car trains from Glasgow at 3.55 p.m. and Edinburgh at 5.25 p.m. to Newcastle, and from Leeds City at 7.40 a.m. to Edinburgh and Glasgow; and an additional Sunday express, with first and third class sleeping cars, from Edinburgh at 9.30 p.m. to Kings Cross.

### FACILITIES IN EAST ANGLIA

For East Anglia there will be a new restaurant car express from Liverpool Street at 3.20 p.m. to Ipswich, Lowestoft and Yarmouth. In the reverse direction additional trains will leave Ipswich at 1 p.m. for Liverpool Street, and Yarmouth at 4.25 p.m., Lowestoft at 4.18 p.m., and Ipswich at 6.13 p.m. for Liverpool Street. As already announced, the "East Anglian" express between Liverpool Street, Ipswich and Norwich is to be restored, and on November 4 the "Yorkshire Pullman" between Kings Cross, Doncaster, Goole, Hull, Wakefield, Leeds, and Harrogate is to return. On both trains seats may be reserved in advance.

### CROSS-COUNTRY IMPROVEMENTS

Amongst numerous other alterations in cross-country and local services in England and Scotland are improved Newcastle-Manchester-Liverpool and Hull-Birmingham-Bristol-Bournemouth services. Regular interval trains will be restored on the Newcastle-Middlesbrough, Darlington-Saltburn, Newcastle-Tynemouth, and Monkseaton-Blyth lines. The Berwick-Alnmouth service is to be reinstated. Other local services to be augmented include Edinburgh-Musselburgh, Doncaster-Sheffield, Doncaster-Grimsby-Cleethorpes,

Peterborough-Grimsby-Cleethorpes, Hitchin-Cambridge, Norwich-Kings Lynn, Norwich-Ipswich, and Yarmouth-Lowestoft-Ipswich.

### Southern Railway

On the Southern Railway the full pre-war service will be put in operation in many suburban areas. Altogether 454 more trains will be run daily. On certain trains between London and Folkestone, Deal, Brighton, Eastbourne, Bournemouth and the West of England, passengers will again be able to reserve seating accommodation at a charge of 1s. a seat. This is only a first instalment of the pre-war facility, and next summer, as rolling stock and trained inquiry office personnel become available, the number of trains on which seats can be reserved will be increased.

### SEAT RESERVATION FACILITIES

These seat reservation facilities will apply to three ordinary trains from Waterloo to Bournemouth and three Bournemouth-Waterloo; two to the West of England and four in the reverse direction; two each way between Victoria, Eastbourne, and Hastings; and one each way between Victoria and Ramsgate, and between Charing Cross and Sandwich. In addition, seats will be reserved in several Victoria-Brighton trains with Pullman cars, and in the all-Pullman "Bournemouth Belle," which is to be restored with an overall timing of 125 min. to Bournemouth Central, calling only at Southampton. Through portions serving Swanage will be provided on two trains to and from Waterloo.

There will be a considerable increase in services between London and the Sussex coast, with six more trains to Brighton and five in the reverse direction. Additional trains will run, also, between London, Worthing, and Littlehampton. Services to Eastbourne and Hastings on Saturdays will be increased by two new trains each way and there will be an additional daily service to Ore. Two more trains each way will be reinstated between Victoria and Portsmouth, one with through coaches to Bognor. In addition there will be an extra train to Bognor on Saturdays and two from Bognor (one Saturdays only) to London.

Services to and from the Isle of Wight via Portsmouth and Ryde also have been accelerated, the time between train and boat at Portsmouth being reduced by about half an hour. There will be an hourly service between London and Portsmouth and vice versa, the last train with boat connection to the Island leaving Waterloo at 6.45 p.m. The last service to London leaves Ryde at 8.35 p.m. (9.35 p.m. Sundays). On Sundays a boat service will also be in operation between Lymington and Yarmouth, with connections to and from London.

### MORE REFRESHMENT CARS

Additional refreshment cars will bring the total of such services up to 178 on weekdays and 88 on Sundays. Thirteen new refreshment services will run on weekdays and two on Sundays, serving Ramsgate, Margate, and Bournemouth West. Suburban service improvements will extend to steam-worked lines, the full pre-war schedule being provided on the Oxted route.

In response to public requests, a weekday service will be restored between Lymington, Shorncliffe, Folkestone, and Dover.

## Conversion of German Lines to Single Track

Plans are being made in the French Zone of occupation in Germany for the conversion to single track of a considerable main-line mileage. The lines concerned are as follow: Mannheim-Heidelberg-Bruchsal-Karlsruhe (45.2 miles); Mannheim-Graben-Karlsruhe (37.7 miles); Karlsruhe-Freiburg in Breisgau-Basel (121.2 miles); and Stuttgart-Horb-Tuttingen-Immendingen-Singen-Schaffhausen (123 miles). On the Offenburg-Lahr section (11.2 miles) of the Karlsruhe-Freiburg in Breisgau main line, the dismantling of the second track is reported to have been completed.

During the war the Germans themselves converted numerous main lines to single track in the countries they controlled, the material thus obtained being taken away either to form railway lines for the military needs of the Germans, or to double and treble existing strategic main lines in Germany. After the German collapse, the second track of many lines in Germany was dismantled to restore traffic on railways which had been dislocated by Allied bombing. Dismantling of second tracks had to be resorted to at the time, because of the stringent shortage of track material and the impossibility of obtaining supplies from abroad.

The Russians, also, dismantled the second track of railway lines in their zone of occupation, both for the reasons mentioned above, and also to extend their broad-gauge tracks into German territory

to facilitate railway traffic between Russia and Russian-occupied Germany.

In German railway circles the view is being expressed that the dismantling will see the end of the long-standing competition between the railway systems west and east of the Rhine, to the exclusive benefit of the French. In addition, the dismantling of the lines mentioned has a wider international background, affecting railway traffic between Northern, Central and Southern Europe. It is pointed out that the Mannheim-Basel and Stuttgart-Schaffhausen main lines are the principal railway arteries between Scandinavia and Switzerland, as well as being the main lines of approach from the North to the Gotthard and Lötschberg routes, thus constituting two important links between the Northern railway systems and Italy.

The Scandinavian countries, Holland and Switzerland are reported to have made serious diplomatic representations in Paris against the proposed dismantling and consequent worsening of their railway connections. It should be pointed out, however, that the countries concerned have the alternative of the French double-track main line between Strasbourg and Basel, which, in fact, is being used for through goods trains between Scandinavia and Switzerland. It appears, nevertheless, that the countries concerned (apart from France and Germany) are in favour of the railway *status quo* in the regions concerned.

## Gloucester Railway Carriage & Wagon Co. Ltd.

At the ordinary general meeting of the Gloucester Railway Carriage & Wagon Co., Ltd., held at Gloucester recently, Sir Leslie Boyce, K.B.E. (Chairman and Managing Director), said that the past year had witnessed the complete cessation of the company's wartime, and an increasing resumption of its peacetime, activities. The transition had been accomplished more smoothly than might have been expected.

The disposable balance for the year was £84,201, and it was proposed to place £25,000 to the general reserve. During the war the directors had not felt justified in distributing by way of dividend what would normally have been regarded as a fair share of the profits, but they now felt justified in recommending a dividend of 15 per cent., less tax.

The transfer of the company's wagon fleet to its wholly-owned subsidiary, the Gloucester Hiring Co., Ltd., accounted for the fact that those wagons which had stood in the books at £187,802 no longer appeared.

The company had entered on its post-war activities with considerably more orders on its books, both in quantity and in value, than ever before in the 80 years of its history; this reflected the unprecedented demands of its customers throughout the world for modern and high-quality rolling-stock. The limiting factor in the company's output would be the supply of labour.

The order book of its subsidiary, the Gloucester Foundry, Limited, also was very satisfactory. Its brake-block department had been fully mechanised during the past year, and when the foundry regained possession of one of its moulding shops, about to be returned to it after requisition, its output of castings would make an even more important contribution to the output of the engineering industry.

Wagon Repairs Limited had completed another very successful year, during which its output of repaired wagons was the highest recorded in its history.

The report and accounts were adopted unanimously.

## Economy in Firing Stationary Boilers

This week the Southern Railway inaugurated at Bricklayers Arms the first of a series of courses arranged in co-operation with the Ministry of Fuel & Power for the training of stokers concerned with stationary heating boilers. Mr. J. H. Milten, the London Regional Fuel Controller of the Ministry, was present and spoke to the members of the first class on the importance of their work in effecting economy in the use of fuel; Mr. W. G. Pape, Economy & Salvage Officer, Southern Railway, said how pleased the company was to organise the courses and to have the assistance of the Ministry in this work.

The classes normally will last two weeks of five days each, and about 150 men, drawn from the four main-line railways and London Transport, will pass through them. Afterwards they will be repeated at Ashford, Brighton, Eastleigh and Exeter, and it is intended further to organise other classes for the instruction of men operating stationary steam boilers, cranes, and other installations. The syllabus includes lectures in the mornings

and practical demonstrations in the afternoons, the demonstrations in London being carried out on a sectional heating boiler fired with coke. Methods of cleaning the fires and the use of a number of simple instruments will be explained as well as the points of maintenance required to keep such installations in efficient operating condition.

These courses are not intended to cater for locomotive firemen, which is the responsibility of another department and has already been given considerable attention. We understand that these are the first courses of their kind to be organised in the South of England by a railway company, and that although the savings are but a fraction of those which would be possible by equivalent improvements in locomotive firing, the Southern Railway hopes that they will result in an appreciable reduction in the amount of fuel used for heating purposes.

## Euston Station Horticultural Society Show

The annual show of the Euston Station (L.M.S.R.) Horticultural Society was held in the Shareholders' Room, Euston Station, L.M.S.R., on September 13. It was opened by Commander A. B. Campbell, well known as a member of the B.B.C. "Brains Trust," who was introduced by Mr. R. Bagwell, District Passenger Manager, Euston, L.M.S.R. Other L.M.S.R. officers present at the opening were Colonel H. Rudyard (Superintendent of Motive Power), Messrs. W. B. Shelton (District Operating Manager, London (Western)), H. B. Taylor (District Operating Manager, London (Midland)), and R. R. Humphrys (Chief Solicitor).

Mr. Bagwell recalled that the Society had its modest beginning in 1942 and held its first show in 1943. It is open to all staff at Euston and St. Pancras Stations. There were 280 entries and 17 of the prizes were won by Police Constable A. Papworth (L.M.S.R. Police) who also had two special awards, including the Royal Horticultural Society's "Bankside Medal."

## Electrification Plans in France

The present electrification plans of the French National Railways Company provide for the conversion of 1,287 route-miles, which will bring the total electrified route-mileage up to 3,481. This comprehensive scheme includes the Paris-Lyons-Chasse line (332 miles), the electrification of which is now in hand (see our March 2, 1945, issue). In addition, the Chasse-Mar-seilles line (204½ miles); the Lyons-Ambérieu-Culoz-Geneva line (106 miles), connecting at Culoz with the electric line to Modane; and the Mâcon-Bourg-Ambérieu line (42½ miles) will be electrified. In South-Western France, the 128-mile Bordeaux-Montauban line is to be converted to electric traction, connecting with the Montauban-Toulouse-Sète line, already electrified. The electrified main artery thus obtained between the Atlantic and the Mediterranean will be extended from Sète to Nîmes (48 miles), and thence to Tarascon (17.4 miles), connecting there with the Lyons-Marseilles line. In addition, the plans provide for electrifying the whole of the Paris suburban system.

Completion of this 1,287-mile scheme, which is planned for 1955, would increase the annual electric power requirements to 1,900 million kWh., as compared with the

present annual total of 900 kWh. The coal saved by the conversion would amount to 2,700,000 tonnes a year. Operation of the whole electrified system would require 1,507 electric locomotives, including a number of powerful types of up to 5,000-h.p., developing speeds up to 87 m.p.h. This total compares with 950 electric locomotives available today.

In connection with the electrification proposals, it was stated recently that 607 miles of conductor line were found destroyed or dismantled when France was liberated. Of this total, approximately 503 miles are stated to be in working order again.

## Staff & Labour Matters

### Compulsory Trade Union Membership

An application for an interim injunction was made to Mr. Justice Wynn Parry in the High Court on September 11 by five L.P.T.B. employees who are members of the National Passenger Workers Union, in an action in which they are claiming:—

1. An injunction restraining the defendants from making it a condition of the plaintiff's employment that they or any of them should join the Transport & General Workers Union;
2. an injunction ordering the defendants to withdraw any such conditions imposed by them on the plaintiffs or any of them;
3. a declaration that any such condition was void and of no effect; and
4. an injunction restraining the defendants from dismissing the plaintiffs or any of them from their or his employment solely by reason of their failure to join any such union.

Mr. Gilbert Paull, K.C., who appeared for the plaintiffs, said that he was confining his application for the moment to asking for an injunction in respect of the relief first claimed, namely, to restrain the defendants from making it a condition of the plaintiffs' employment by the defendants that they should join the Transport & General Workers Union. He had asked the defendants to give an undertaking for one week not to take action against the plaintiffs but they were unable to assist him in that way and it therefore became necessary for him to apply for an injunction *ex parte*.

Mr. G. D. Roberts, K.C., who appeared for the London Passenger Transport Board, said that the defendants took up the position that what they had done with regard to the plaintiffs was strictly within their legal rights. They had very important duties, not only to their employees, but also to millions of the public, and they felt that the course which they had taken was the only one open to them. He wished to do nothing which would lend any colour to the suggestion that there was anything at all in the plaintiffs' action.

Mr. Paull said that if no undertaking was given he must ask for an injunction. The Board had issued a statement saying that it would not employ any person who would not join the Transport & General Workers Union. That was published on August 26.

After discussion, Mr. Justice Wynn Parry said that he thought it best that the matter should stand over until September 18, when, if the evidence was complete, he would be prepared to begin the hearing of the action and continue until it was finished.

## Railway Charges Consultative Committee

### Opening of inquiry into adjustment of rates and fares

The inquiry by the Railway Charges Consultative Committee to advise the Minister of Transport regarding adjustment of charges made by the controlled Railway Companies and joint lines opened on Monday at the Old Hall, Lincoln's Inn Fields, W.C.

The tribunal, with Sir Bruce Thomas, K.C., presiding, is to report to the Minister on recommended adjustments of fares and charges so that the net revenue for 1947 may approximate to the £38,633,000 payable annually to the controlled railway companies.

Mr. Lionel Heald, K.C., leading counsel, for the four main-line companies, in his opening statement to the tribunal outlined the attitude and position of the railway companies in the inquiry.

"We realise very sincerely that any prospect of a general increase in railway charges is bound to be a matter of great public interest and great public concern, especially when it may affect the family budget. We know that the railway passenger has had a rough time of it during the war and that our services in all departments still fall far short of that on which we prided ourselves in peacetime. Though we desire and intend to improve those services as rapidly as possible, it would be quite wrong to disguise the fact that it will take time and cost money," he said.

"We appreciate that less than three months ago, the Minister of Transport announced in the House of Commons a number of substantial increases. In these circumstances the railways recognise that the public will wish to have, and is entitled to have, a clear explanation of just why it is that we have to recommend the Committee to advise the Minister to make certain increases—further increases beyond those made by the Minister already.

#### RANGE OF INCREASES

"Perhaps I might say at once that the increases are nothing like as large as has been suggested in some quarters recently. I think in the past few days there have been one or two statements in the Press which have been quite accurate, but there have been suggestions that, I think, at once ought to be disposed of. In fact the increases which are recommended range from charges of just under 3 per cent. in the case of ordinary passenger fares to just over 9 per cent. in the case of goods rates.

"In the case of season tickets they are in the same ratio of increases as goods rates and thereby all the charges for railway traffic are brought to a figure of 37 per cent. above the pre-war figures.

"The reason why there is the difference in those percentages is because the Minister of Transport's increases were 25 per cent. for goods, seasons and workmen's tickets, and 33 per cent. for passenger fares.

"We are not recommending the Committee to act on what I may call the Minister's 'differentials,' but recommend the Committee to adopt a uniform figure throughout.

"It may astonish some who are not familiar with the present legal position of the railway companies to know that the railway companies have no financial interest whatever in the results of this inquiry. The shareholders cannot receive one farthing more if you advise the Minister to order further increases. They

cannot receive one farthing less if you order smaller increases or nothing at all. It would not make the slightest difference to them, from the financial point of view, if you ordered all the rates to be halved. The reason for that striking fact is that the railway companies are still controlled under the Defence Regulations. This sounds a little odd in view of the time that has elapsed since the end of the war."

During control the railway companies were limited to a fixed annual return irrespective of the annual net revenue which they might have earned, Mr. Heald continued. Under the Railway Control Agreement of 1942 this annual payment, so far as the four main-line companies and minor lines associated with them were concerned, was just over £38 millions.

"This has to be compared with the standard revenue to which they were entitled under the Railways Act, of over £50 millions," Mr. Heald commented.

#### GOVERNMENT BONUS NEARLY £200 MILLIONS

"Thus the Government was, under the control system, to take any surpluses over the £38 millions and make good any deficiencies. During the war the Government did pretty well out of this, to say the least of it. It got a bonus amounting to nearly £200 millions in the five years from 1940, while the railways got their £38 millions a year out of it and nothing more. So no one can accuse the railway companies of having profiteered out of the war. We believe the railways ought to be put on a proper sound and economic basis at the first possible moment. At the present time the railways are not paying their way and there is no escaping a further falling-off in the region of £20 millions in 1947. Railway charges, so far, have increased only 25 to 30 per cent. over pre-war figures, whereas costs in 1947 are estimated to increase by 75 per cent.

"In these circumstances it would be dishonest if we were to refrain from giving the view that the present level of charges is uneconomic and if we do not submit constructive proposals as to how the deficiency can be made good with the minimum of unfairness and minimum of disturbance to trade and industry."

#### STRAIN OF WAR WORK

Referring to the strain placed upon the railways by war commitments, Mr. Heald said:—

"It is quite a mistake that the railways were virtually nationalised during the war so far as the executive side was concerned. As regards Government traffic, it is perhaps not generally realised what this amounted to and meant and what caused it," he said.

"Some people seem to think it was a question of running the same number of trains but with different things in them. In 1944 Government traffic amounted to nearly £150 millions, yet the whole traffic of the railways in 1938 was less than £200 millions. During the year 1944 alone 178,000 special trains were run for war purposes. In preparation for the Normandy landings 80 troop trains a day were needed and at the peak 100,000 men were moved in less than a week. For a single night bombing operation over Germany it was necessary to transport

two million gallons of petrol and between 5,000 and 10,000 tons of explosives."

Mr. Heald also referred to the railway companies' contributions to anti-aircraft movements during the blitzes and evacuation schemes. All these things were paid for, but their falling off had very heavily affected the railway companies.

Counsel also forecast a substantial decrease of Forces' travel in 1947, as compared with 1946. Trade recovery had not yet by any means got into its stride and motor transport was getting going again.

"It now appears probable that the deficit for 1946 will only be £8 millions. If the charges which were brought in in July had been on all the year there would not have been any deficiency at all. A further falling off in Government traffic in 1947 is inevitable.

#### COSTS UP 75 PER CENT

"There is a matter of plain common sense involved. The overall increase of railway costs is about 75 per cent. and the charges have so far been increased by 25 to 30 per cent. Is it really surprising that some further increases are necessary? We definitely cannot recommend the continuance of the differentiation between goods and passenger rates over pre-war figures. The Minister subsidised goods at the expense of passengers. We do not support that or suggest that it is right. From the beginning we have never disguised the fact that we consider it absolutely wrong that passengers should subsidise goods. That is the Minister's decision, but not the railway companies'. We do not support it and recommend you to advise the Minister to reconsider that.

"We do believe that the general public will appreciate, considering the increases there have been in costs of all kind, that our increases cannot be said to be out of the way and any suggestion that they are inflationary is really, in my submission, nonsense. Unfortunately, the railway companies, unlike other people, are at the back of the queue in these things."

#### COST OF LOCOMOTIVE CONVERSION TO OIL BURNING

Dealing with the difficulties of estimating figures, Mr. Heald mentioned that according to the present programme, of extremely recent origin, and made after the recommendations to the tribunal had been considered, for all the railway companies, twelve hundred engines had to be converted from coal to oil by the end of 1946. The approximate cost of conversion and necessary storage installations was £2 millions.

"We can't include that in the 1947 estimates of expenditure, because it has to be done before the end of 1946," he said. "As regards the running power after conversion, it is extremely difficult to forecast, as this must be regarded as experimental, but it is thought that the increased cost may be as much as £1,000 a year per locomotive."

#### DROP IN GOVERNMENT TRAFFIC

Mr. Heald concluded that it was estimated there would be a drop of about £4 millions in Government goods traffic in 1947 and a drop in Government passenger traffic of £18 millions, which meant an estimated drop in Government traffic totalling £22 millions. In 1947, total passenger receipts would be about £17 millions less.

Mr. Cyril Russell Dashwood, Chief Accountant of the G.W.R. since 1938, then gave evidence, representing the four main-line railways, of the accounting practices of the companies and the hearing adjourned until Tuesday.



## Notes and News

**Rolling Stock and Works Draughtsmen Required.**—Qualified rolling stock and works draughtsmen are required by the Gloucester Railway Carriage & Wagon Co. Ltd. See Official Notices on page 339.

**Traffic Assistant Required for South America.**—An experienced assistant is required for the traffic department of a British railway company operating in South America. See Official Notices on page 339.

**L.N.E.R. Debenture Stock Balances.**—Balances will be struck as at the close of business on September 27 on L.N.E.R. 5 per cent. redeemable debenture stock, for the purpose of preparing warrants for interest payable on October 15.

**Beyer, Peacock & Co. Ltd.**—Beyer, Peacock & Co. Ltd. is to redeem on February 15, 1947, the whole of the outstanding 5 per cent. debenture stock at £105 for every £100 nominal of stock plus a sum equal to interest (less income tax) calculated from January 1, 1947. There is £94,328 of this stock outstanding.

**L.N.E.R. Services via the Forth Bridge.**—Various alterations were made in L.N.E.R. Sunday train services from Edinburgh (Waverley) to Fife and the North on September 15, in consequence of the approaching completion of the major repair work which has been in progress on the Forth Bridge during the summer. Several trains which had been diverted via Alloa have resumed running over the bridge, and certain trains introduced to give connections during the period of diversion have been withdrawn.

**Sentinel (Shrewsbury) Limited.**—Net profit for the year to March 31 last, after allowing £22,107 for taxation and including £14,586 from E.P.T. recovery and £8,443 from reserves not required, was £35,897. This compares with £26,795 in 1944-45, when £98,687 was provided for taxation and an unspecified sum was credited from reserves. The company is placing £50,000 to reserve and carrying forward £39,181. No dividend is declared on the ordinary stock, and there was no such dividend last year.

**Improved East Anglia to Scotland Connections, L.N.E.R.**—In addition to the East Anglian train service improvements already announced by the L.N.E.R. to take effect on October 7, the 10.15 a.m. from Yarmouth Vauxhall and 10 a.m. from Lowestoft Central through services are to be retimed to enable improved connections to be given to points north of York. Leaving Yarmouth at 10 a.m. and Lowestoft at 9.45 a.m., the new arrival times will be 2.32 p.m. at Lincoln, 3.36 p.m. at Doncaster, 4.27 p.m. at York, 5.38 p.m. at Darlington, 6.30 p.m. at Newcastle, 9.10 p.m. at Edinburgh Waverley, and 10.52 p.m. at Glasgow Queen Street.

**Unification of Drawing Practice.**—The British Standards Institution is circulating a memorandum to ascertain the views of industry on the adoption of third angle projection as the British Standard method of projecting views on engineering drawings. The proposal to adopt this method was made at the conference on the Anglo-American unification of certain engineering standards held in Ottawa last year. In bringing it to the notice of the industries concerned, the British Standards Institution quotes a letter from the Ministry of Supply emphasising the importance at-

tached by the Government to the maximum possible unification of the engineering standards of this country, the British Commonwealth, and the United States. Diagrams and notes on the characteristics of first angle and third angle projections are reproduced in the circular.

**Closing of Colinaive Pier.**—The steamers of the London Midland & Scottish Railway Company, the Caledonian Steam Packet Co., Ltd., and David MacBrayne, Limited, ceased to call at Colinaive Pier (near Rothesay) after August 31, the pier having been closed after that date.

**Southern Railway Passengers.**—Between August 1, when cheap-day fares were restored on certain weekdays, and August 24, the Southern Railway issued 296,649 cheap-day tickets and 19,952 day-excursion tickets to selected seaside resorts. During the month of August, 1946, 48,478 passengers travelled to and from the Channel Islands by Southern Railway steamers via Southampton. During the same month in 1939 the total was 46,138. The increased figure was reached despite the fact that fewer ships were sailing on this route in 1946.

**Plans for New Railways in Turkey.**—A five-year industrial plan and a ten-year railway building plan have been decided on by the Turkish Government. The industrial plan, to cost £1600 millions (about £115 millions), provides for the establishment of industries either important from the national defence viewpoint or which can be set up without undue foreign exchange expenditure. Under the railway plan, three extra lines running parallel to the west-east Anatolia line will be provided, and a new line will be built between Istanbul and Ankara via Bolu.

**International Conference of National Tourist Associations.**—Twenty-seven countries have intimated their intention to be present at the International Conference of National Tourist Associations, which will be held at the County Hall, Westminster, from October 1 to October 7. The conference will be opened at 10 a.m. on October 1 by Lord Hacking, Vice-President of the Travel Association. On the first day the subject of "Free Movement of Tourists" will be discussed, with special reference to passports and visas, customs and immigration, and currency control. Other subjects on the agenda include the exchange of tourist publicity matter between countries, the scope and standardisation of tourist statistics, and the formation of an international organisation of national tourist bodies. The number of countries to be represented constitutes a record for this type of conference.

**Fifth Session of E.C.I.T.O. Council.**—The Council of the European Central Inland Transport Organisation held its fifth session in Paris on August 29-30. Representatives were present from all the Member Countries. Observers attended from the United Nations, U.N.R.R.A., European Coal Organisation, International Labour Office, Central Commission for Navigation on the Rhine, and the International Chamber of Commerce. The Council discussed the programme of work of the organisation, approved the budget and the allocation of contributions for the year 1946-47, and elected representatives of the following countries as Members of the Executive Board for the year 1946-47: Belgium, Czechoslovakia, France, Poland, U.K., U.S.A. and U.S.S.R. The representative of Denmark, Colonel Jorgenson, was

elected Chairman, and the representative of Poland, Mr. C. Alexandrowicz, was elected Vice-Chairman of the Council for the next session.

**G.W.R. Cheap Day Tickets.**—The G.W.R. has reintroduced first class cheap-day tickets, issue of which, at first, is limited to the stations holding stocks of the necessary tickets. As these become available, however, the facility will be extended throughout the system and, providing first class accommodation is available, the new cheap tickets will be issued be-

## British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices	
			Sept. 17, 1946	Rise/ Fall
G.W.R.				
Cons. Ord. ....	60½	47½	55½	+ ½
5% Con. Pref. ....	124½	104½	112½	—
5% Red. Pref. (1950) ..	107½	101½	104½	—
5% Rt. Charge .....	137½	120	127½	—
5% Cons. Guar. ....	135½	117	121½	—
4% Deb. ....	118	106	113½	—
4½% Deb. ....	119½	108	116½	—
4½% Deb. ....	124½	111½	122	—
5% Deb. ....	138	124	133½	—
2½% Deb. ....	83	74½	89½	—
L.M.S.R.				
Ord. ....	33	23½	27½	+ 1
4% Pref. (1923) ....	65	50	52	—
4% Pref. ....	80½	69½	74½	—
5% Red. Pref. (1955) ..	106½	99½	102½	—
4% Guar. ....	106½	97	101	—
4% Deb. ....	110½	102	108	—
5% Red. Deb. (1952) ..	110½	103½	106½	—
L.N.E.R.				
5% Pref. Ord. ....	8½	5½	5½	+ ½
Def. Ord. ....	4½	2½	2½	+ ½
4% First Pref. ....	62½	49½	51	+ ½
4% Second Pref. ....	33½	24½	26½	+ ½
5% Red. Pref. (1955) ..	103	96	99	—
4% First Guar. ....	104½	95	99	—
4% Second Guar. ....	97	89½	94½	—
3% Deb. ....	91½	82½	94½	—
4% Deb. ....	109½	101	108	—
5% Red. Deb. (1947) ..	103½	100	100	—
4½% Sinking Fund Red. Deb. ....	106½	103	105½	—
SOUTHERN				
Pref. Ord. ....	79½	63	71	—
Def. Ord. ....	27	20½	20½	+ ½
5% Pref. ....	124½	104	109½	—
5% Red. Pref. (1964) ..	117	107	109½	—
5% Guar. Pref. ....	135½	117	122½	—
5% Red. Guar. Pref. (1957) ....	117	106½	111½	—
4% Deb. ....	117	104½	112	—
5% Deb. ....	137	124	132½	—
4% Red. Deb. (1962- 67) ....	112	104½	109½	—
4% Red. Deb. (1970- 80) ....	113½	104	109½	—
FORTH BRIDGE				
4% Deb. ....	106	103	106	—
4% Guar. ....	106	101	103	—
L.P.T.B.				
4½ "A" ....	125	117	125½	—
5% "A" ....	135	127	135½	+ 1
3% Guar. (1967-72) ..	100	97½	105	—
5% "B" ....	125½	115	120½	—
5% "C" ....	70	58	60½	—
MERSEY				
Ord. ....	37	31½	30	—
3% Perp. Pref. ....	72½	68½	73	—
4% Perp. Deb. ....	104½	104	105	— 1
7% Perp. Deb. ....	84	78½	82½	—
IRELAND*				
BELFAST & C.D.				
Ord. ....	8½	6	7½	—
G. NORTHERN				
Ord. ....	34	24½	39	— 1
Pref. ....	52½	42½	60½	—
Guar. ....	80	68	92	—
Deb. ....	97½	87½	105	—
IRISH TRANSPORT				
Common ....	—	—	18½	—
3% Leb. ....	—	—	103½	— ½

\* Latest available quotation

## London and North Eastern Railway

**NOTICE** is hereby given that, for the purpose of preparing the Warrants for Interest payable on the 15th October, 1946, on the Company's 5 per cent. Redeemable Debenture Stock, the Balance will be struck as at the close of business on 27th September, and such Interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the 5 per cent. Redeemable Debenture Stock should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 27th September.

By Order:

W. H. JOHNSON,

Secretary of the Company.

Marylebone Station,  
London, N.W.1.  
17th September, 1946.

**BRITISH** Railway Company operating in South America has vacancy in their Traffic Department for an experienced Assistant. Knowledge of Spanish an advantage. Write, stating salary required and giving age and full particulars of experience and qualifications, to Box 1313, c/o Charles Barker & Sons Ltd., 31, Budge Row, London, E.C.4.

**GLOUCESTER** Railway Carriage & Wagon Co. require qualified Rolling Stock Draughtsmen, also a Works Draughtsman for layout of plant. Permanent positions for suitable applicants. Superannuation Scheme in operation. Apply by letter to General Manager, Gloucester.

**STATION DESIGN.** A striking example of modern British practice at the important wayside station of Luton. Reprinted from *The Railway Gazette*, July 7, 1944. Price 1s. Post free 1s. 2d.

tween the same points and under the same conditions as the third class cheap-day tickets. The first class cheap-day fare will be 50 per cent. above the existing third class cheap-day fare.

**Institute of Transport Question Papers, 1944-46.**—The question papers set at the Graduateship and Associate Membership examinations of the Institute of Transport from 1944 to 1946 are available in booklet form, and may be obtained from the Institute, 15, Savoy Street, London, W.C.2, price 1s. a set for each examination (post free). Classes for the Institute of Transport examinations during the year 1946-47 are available at Catford and Kennington Commercial Institutes, Chiswick and North Western Polytechnics, City of London College, and Ealing, South West Essex, and Tottenham Technical Colleges.

**Ferry Service for Motor Vehicles.**—A new ferry service for transporting motor vehicles between Tilbury and various Continental ports has been announced by Frank Bustard & Sons, 20, Cockspur Street, London, S.W.1, under the title of The Continental Line. The use of L.S.T.s. (tank landing ships) will permit loading and unloading without dock cranes and ships' derricks. It is understood that Mr. Gilbert S. Szlumper, formerly General Manager of the Southern Railway, will be identified with the arrangements. The Continental terminals at present proposed for the service are Calais, Antwerp, Rotterdam, and Hamburg.

**Redecorating London Transport Stations.**—Work has begun on the redecoration of Finsbury Park (Piccadilly and Northern City stations). Twenty-one London Transport stations have had their post-war cleaning so far, and with the accelerated programme now beginning it is hoped to complete 50 more by the end of this year. Caledonian Road, Holloway Road, and Arsenal have been finished, Marble Arch, Chalk Farm, Temple, Covent Garden, and Marylebone are undergoing treatment, and Drayton Park, Highbury, and Canonbury & Essex Road are next on the list. The work consists of thorough cleaning of tiles, paintwork, signs, light shades, and bulbs, with new distemping in places where renewal is wanted badly. Most of the posters are re-

## OFFICIAL NOTICES

**A CHIEF COST AND WORKS ACCOUNTANT** is required for the Chief Accountant's Department of the London & North Eastern Railway. The responsibilities include the supervision of the accounting and costing throughout the Works controlled by the Chief Mechanical Engineer. Candidates must be qualified and hold responsible executive positions in industry. A knowledge of Budgetary Control and Standard Costs and some experience in the engineering industry is desirable. Age not over 40 years. Commencing salary, £1,500 per annum. Superannuation benefits.

Applications must give age and full details of education, qualifications, experience, positions held and salaries earned. They should be addressed to Robson, Morrow & Company, 59, New Cavendish Street, London, W.1.

**A CHIEF PRODUCTION ENGINEER** is required for the Chief Mechanical Engineer's Department of the London & North Eastern Railway. The responsibilities include assisting the Chief Mechanical Engineer in the supervision of the Works concerned with the building and repairing of locomotives, carriages and wagons. Candidates must be highly qualified and hold executive positions in the engineering industry. Age not over 45 years. Commencing salary, £2,000 per annum. Superannuation benefits. Applications must give age and full details of education, qualifications, experience, positions held and salaries earned. They should be addressed to Robson, Morrow & Company, 59, New Cavendish Street, London, W.1.

**SECTIONED PERSPECTIVE VIEW OF LOCOMOTIVE FRONT END.** A notable drawing of L.M.S.R. class "7P" 4-6-2 locomotive of the latest type. Reprinted from *The Railway Gazette*, June 15, 1945. Price 2s. 6d. Post free 2s. 8d.

newed at the same time. Cleaning and re-distemping are receiving priority, but minor repairs also are being carried out to floor surfaces, stair treads, plastering, and so forth. As materials are short, London Transport is concentrating on brightening up as many stations as possible, rather than carrying out all the work at a few.

**British Insulated Callender's Cables Worcester Office.**—The address of the Worcester Office of British Insulated Callender's Cables Limited has been changed, and is now 37, Broad Street, Worcester. The telephone number remains as Worcester 2070.

**Road Hauliers' Licences.**—The scheme agreed between the four main-line railways and the Road Haulage Association under which Road Hauliers could voluntarily discuss their applications for licences with Regional Licensing Sub-Committees, set up for that purpose, with a view to achieving a substantial decrease in the number of objections lodged, has been in operation since the resumption of licensing on July 1, 1946. The results of the first eight weeks are regarded as an indication that the scheme is proving highly satisfactory, as is evidenced by the fact that 1,189 applicants voluntarily agreed to discuss their applications with the Regional Sub-Committees, with the result that in 611 cases agreement was reached and applications or objections were withdrawn. More than 50 per cent. of the cases heard resulted in agreement being reached.

**Canadian Freight Loadings in July.**—The monthly movement of railway revenue freight traffic for July was slightly above that of June, but below the corresponding 1945 figures. Estimated freight loadings for the month totalled 8,590,000 tons, an increase of 429,000 tons on the previous month, but a decline of 762,000 tons from the July, 1945, aggregate of 9,352,000 tons. The July total was the best since last November, but the lowest for July since 1943. Freight loaded for the first seven months of the current year aggregated 55,241,000 tons, compared with 59,687,000 for the corresponding period a year ago. Cars loaded during the period totalled 2,025,000, compared with 2,078,000 last year. The average load works out to 27.2

## Burma State Railways

**URGENT** vacancies exist for (a) Civil Engineers (Senior and Junior); (b) Mechanical Engineers; and (c) Railway Signal Engineers in the Burma State Railways. Candidates should be British subjects aged preferably between 25 and 40, and should possess an Engineering degree or equivalent qualifications, plus the following: For (a) at least seven years' (Senior) and two years' (Junior) practical experience on Civil Engineering Works. For some of the Senior posts experience of railway maintenance is essential, and this would be an advantage for the other posts; (b) apprenticeship or pupillage with a main-line railway and at least two years' subsequent experience in the Locomotive or Carriage and Wagon Departments; (c) experience in Electrical and Mechanical Interlocking and Block Telegraph Instruments and Telephones.

Contract for 3 years. Salary, at flat rate throughout and fixed according to age on appointment, from Rs.850 a month for age 25 (£765 a year) to Rs.1,700 a month for age 40 (£1,530 a year). Free passage to and from Burma and for families should conditions permit. Bonus on satisfactory termination of contract of £100 or £150 (depending on salary) for each year's service. Free medical attention.

Further particulars and forms of application may be had on request (by postcard) from the Office of the High Commissioner for India, India House, Aldwych, London, W.C.2. Last date for the receipt of applications, October 12, 1946.

**THE Hunslet Engine Co. Ltd., Leeds,** are urgently requiring the services of Senior Draughtsmen. Men with Locomotive experience preferred but not essential provided applicants can satisfy requirements. Prospects of continuous work with good working conditions and canteen facilities.—Apply, 125, Jack Lane, Leeds 10.

tons a car, compared with the 1945 figure of 28.7 tons a car. Estimated tonnage index for the month was 187.9, a decline of 5.8 from the previous month's index of 193.7 and a drop of 16.7 from the 1945 figure of 204.6.

**Dorman Long Developments.**—Dorman Long & Co. Ltd., Middlesbrough, is building a new £500,000 power plant at Cleveland works, where construction has begun on a new central ore unloading and ore preparation plant for the whole of the group at a cost of £1,250,000. This scheme will serve also the firm's £8,000,000 project for a new steelworks and universal beam mill on a virgin site between its Cleveland and Redcar works, for which some preliminary preparation has been put in hand already. It is expected that the power plant will be in operation next February. Approximately 2,400 tons of steel will be used in the construction of the boiler plant itself and another 1,000 tons of structural steel framework in the power-house building.

**North Central Wagon & Finance Co. Ltd.**—Speaking at the general meeting of the North Central Wagon & Finance Co. Ltd., the Chairman, Mr. E. Duncan Taylor, said that the profit for the year, subject to taxation, amounted to £73,002, out of which had been provided for profits tax and income tax £35,552, leaving a net profit of £37,450. The amount brought forward was £25,520, leaving a disposable balance of £62,970. After providing the preference dividend, additional remuneration proposed to be voted to directors, as members of the finance committee, a dividend of 4.8d. per share less tax on the paid up ordinary share capital (the same as last year), transferring £10,000 to reserve account and £10,000 to pensions reserve, the balance of undivided profit to be carried forward was £27,738, or £2,218 more than the balance brought forward from last year.

## Forthcoming Meeting

October 5 (Saturday).—Permanent Way Institution (Manchester & Liverpool Section). Visit to L.M.S.R. Research Department's Laboratory, Derby.

## Railway Stock Market

A general advance in Argentine railway stocks on the Anglo-Argentine agreement, and a spectacular rise in San Paulo Railway ordinary, preference and debenture stocks on the surprise announcement of acquisition of the line by the Brazilian Government were outstanding features of stock markets earlier this week. The last-minute Anglo-Argentine agreement, after the alternating hopes and fears of recent weeks, came as a complete surprise, and stock markets derived encouragement from Mr. Dalton's statement that a satisfactory solution had been reached on the three main points at issue, namely, sterling balances, the meat contract and the British-owned railways. Later, prices eased, attention being centred on a study of the full terms of the agreement, particularly in regard to its significance to holders of Argentine railway stocks; but profit-taking was well absorbed in most cases, although best prices touched were not fully held. The surprise announcement of acquisition of the San Paulo Railway caused a spectacular rise in the company's stocks on Monday. The ordinary advanced 38 points to 85, and was quoted 80-100 at one time with business a matter of negotiation; the preference stock jumped 25 to 90, and the debentures also were appreciably higher, the 4 per cent. being marked up from 77 to par.

Reflecting the assumption that the proposed joint Anglo-Argentine administration for the railways will give stockholders a fair deal, Argentine railway stocks continued in active demand at the enhanced levels, with debenture stocks particularly favoured. Gains in the latter ranged up to eight points at one time, before moderate profit-taking developed. Preference stocks recorded gains of up to 4

points and ordinary stocks were 2 points better, despite a fair amount of profit-taking. Buenos Ayres Great Southern ordinary jumped to 14, a rise of 2½; the 5 per cent. preference at 30 and the 6 per cent. preference at 22 both gained 4 points, compared with closing prices on Friday last, and the 4 per cent. debentures put on 5½ at 73.

Buenos Ayres & Pacific was over 2 points higher at 9½, the 1912 debentures gained 5½, the consolidated debentures 5 and the 4 per cent. debentures 3 points. Buenos Ayres Western ordinary was particularly active, partly because of the expectations of improved results for the past financial year; but after touching 18½ the price eased to 17½, which however was over two points above last Friday's closing level. Buenos Ayres Western 4½ per cent. preference and 5 per cent. debentures both jumped 5 points.

Central Argentine stocks were also well in the picture. The ordinary moved a point higher at 9½, but among the preference and debentures, gains ranged from 3 to 6 points. Argentine Great Western and Argentine North Eastern issues participated in the general rise. Entre Rios stocks were little changed, although Central Uruguay stocks improved with Argentine rails, the ordinary being 7½ and the second debenture 31.

Movements in other foreign railway stocks were unimportant, but Antofagasta preference improved a point to 44, and in sympathy with the big jump in San Paulo. Stocks of other British-owned Brazilian railways were firmer. Leopoldina 4 per cent. debentures gaining a point at 54. Nitrate Rails shares were slightly better at 73s. 9d. Canadian Pacific (20½) reflected the rally in dollar stocks. Home rails also developed a better tendency, partly because of the improved trend in

markets, where renewed strength of British Funds was again prominent. Industrials became firmer with numerous good features, oils improved, and iron and steels strengthened despite continued talk that a Bill may be contemplated to enable the Government to acquire shares in iron and steel companies. A sharp rally in Guest Keen was recorded, and elsewhere, Associated Electrical shares jumped on the maiden interim dividend which has aroused hopes of the year's total being raised from 10 per cent. to 12½ per cent.

The underlying reason for the better tendency in home rails was not the possibility of a further increase in fares and charges, which would not affect the fixed rental received by the railways. Sentiment has been favourably influenced by the view that the Government appears to attach particular importance to the fixed rental by emphasising that it should be earned by the railways. The assumption is that in the event of nationalisation, the fixed rental may very well prove a minimum basis for compensation for stockholders. Moreover, it is also being contended that a square deal for Argentine railway stockholders must increase the prospect of fair treatment for stockholders in the British main line railways.

Great Western has improved to 55½, and L.M.S.R. to 27½ and Southern deferred to 20½. Among preference stocks, L.M.S.R. seniors improved to 74½, and the 1923 stock to 52½; the guaranteed stock strengthened to 101½, L.N.E.R. second preference at 26½, and the first preference 51 were better, also the first guaranteed at 99½, while the deferred and preferred stocks moved fractionally higher. Southern 4 per cent. debentures firmed up to 112. Elsewhere, London Transport "C" changed hands around 60.

### Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares of Stock	Prices		
			Total this year	Inc. or dec. compared with 1944-5		Totals		Increase or decrease		Highest 1945	Lowest 1945	September 17, 1946
						1946/7	1945/6					
			£	£		£	£	£				
Antofagasta ...	834	8.9.46	34,130	+ 7,500	36	1,158,260	1,071,870	+ 86,390	Ord. Stk.	12	8½	11½
Arg. N.E. ...	753	7.9.46	ps.315,100	+ ps.28,600	10	ps.3,124,500	ps.3,066,900	+ ps.58,000	"	10	5½	9
Bolivar ...	174	Aug., 1946	3,995	+ 1,040	35	34,095	39,437	+ 5,342	6 p.c. Deb.	8½	5½	7
Brazil ...									Bonds	25	17	26½
B.A. Pacific ...	2,771	7.9.46	ps.2,025,000	+ ps.91,000	10	ps.21,038,000	ps.19,762,000	+ ps.1,276,000	Ord. Stk.	7	5	9½
B.A.G.S. ...	5,080	7.9.46	ps.3,331,000	+ ps.169,000	10	ps.32,248,000	ps.31,235,000	+ ps.1,013,000	Ord. Stk.	13½	10½	15
B.A. Western ...	1,924	7.9.46	ps.1,264,000	+ ps.116,000	10	ps.11,932,000	ps.10,913,000	+ ps.1,019,000	"	12½	9½	19
Cent. Argentine ...	3,700	7.9.46	ps.3,159,856	+ ps.46,144	10	ps.31,099,251	ps.30,514,250	+ ps.585,001	"	9½	7	10½
Do. ...									Dfd.	5	2½	4½
Cent. Uruguay ...	970	7.9.46	27,290	+ 4,262	10	340,556	345,936	+ 5,380	Ord. Stk.	7½	4	9½
Costa Rica ...	262	June, 1946	31,811	+ 4,213	52	551,042	295,175	+ 55,867	Stk.	16½	13	12½
Dorada ...	70	Aug. 1946	35,400	+ 6,400	35	256,775	243,335	+ 13,440	1 Mt. Deb.	103	102	102½
Entre Rios ...	808	7.9.46	ps.416,400	+ ps.16,700	36	ps.4,236,100	ps.4,231,900	+ ps.4,200	Ord. Stk.	7½	4½	9
G.W. of Brazil ...	1,030	7.9.46	23,300	+ 3,600	36	977,900	873,200	+ 104,700	Ord. Stk.	30½	23½	21½
Inter. Ctl. Amer. ...	794	June, 1946	8814,722	+ 812,606	26	86,472,238	\$5,532,507	+ \$939,731	"			
La Guaira ...	22½	Aug., 1946	6,322	+ 109	35	46,020	49,503	+ 3,483	5 p.c. Deb.	78	70	58
Leopoldina ...	1,918	7.9.46	74,717	+ 8,331	36	2,103,891	1,823,797	+ 280,094	Ord. Stk.	4½	3½	3½
Mexican ...	483	31.5.46	ps.1,464,000	+ ps.459,100	22	ps.18,661,800	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	4	4	4
Midland Uruguay ...	319	July, 1946	18,824	+ 906	5	18,824	19,730	+ 906	"			
Nitrate ...	382	15.9.46	5,919	+ 3,985	37	150,701	132,226	+ 18,475	Ord. Sh.	75½	67½	72½
N.W. of Uruguay ...	113	July, 1946	4,575	+ 1,517	2				"			
Paraguay Cent. ...	274	6.9.46	62,075	+ 61,744	10	\$605,045	\$635,914	+ \$30,869	Pr.Li.Stk.	79½	77½	73½
Peru Corp. ...	1,059	Aug. 1946	169,782	+ 21,329	9	320,684	283,203	+ 37,481	Prf.	108½	77	11
Salvador ...	100	30.8.46	c 80,000	+ c 11,000	4	cl.597,450	c 1,511,000	+ c 86,450	"			
San Paulo ...	153½								Ord. Stk.	60½	50½	90
Taital ...	156	Aug., 1946	3,255	+ 840	9	7,050	4,200	+ 2,850	Ord. Sh.	17½	10½	18½
United of Havana ...	1,301	7.9.46	45,604	+ 4,098	10	541,437	455,933	+ 85,504	Ord. Stk.	3	1	1½
Uruguay Northern ...	73	July, 1946	1,098	+ 834	5	1,098	1,932	+ 834	"			
Canada												
Canadian National ...	23,535	July, 1946	8,611,250	+ 1,350,000	27	55,150,500	63,428,500	+ 8,278,000	"			
Canadian Pacific ...	17,037	7.9.46	1,376,000	+ 68,750	36	48,558,000	54,069,500	+ 5,511,500	Ord. Stk.	24	14½	20
Various												
Barsi Light ...	202	Aug., 1946	19,605	+ 442	22	129,315	114,652	+ 14,663	Ord. Stk.	131	123	114
Beira ...	204	June, 1946	78,908	+ 1,361	34	676,166	693,407	+ 17,241	"			
Egyptian Delta ...	607	31.7.46	19,446	+ 1,759	16	201,088	196,080	+ 5,008	Prf. Sh.	10	8½	5
Manila ...									B. Deb.	71	55½	65½
Mid. of W. Australia ...	277	July, 1946	14,495	+ 729	4	14,495	13,766	+ 729	Inc. Deb.	97½	85	75
Nigeria ...	1,900	June, 1946	441,797	+ 167,749	14	1,120,904	837,609	+ 283,295	"			
Rhodesia ...	2,445	June, 1946	533,593	+ 10,968	34	4,600,381	4,510,817	+ 89,564	"			
South African ...	13,323	17.8.46	1,139,079	+ 231,514	20	21,968,166	19,645,260	+ 2,322,906	"			
Victoria ...	4,774	May, 1946	1,351,280	+ 4,246					"			

† Receipts are calculated @ 1s. 6d. to the rupee